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IN THIS ISSUE

Easy When You Know How

Just keep a few fundamentals in mind, and effective window displays are easy to create, says J. Walter Johnson of the Powers Furniture Co., Portland, Ore. Mr. Johnson, who makes a habit of winning prizes in window display competitions, tells what those fundamentals are on pages 8 and 9. There are also pictures of his and other good displays.

Down on the Farm

The farmer is a good prospect for refrigerator sales this year, but, mister, you've got to develop a special sales technique to crack these customers. So say some "corn belt" dealers who are doing a job in rural sales. Page 4.

'My Conditioner Starts-and-Stops'

If you're called to service a unit conditioner that starts-and-stops, you'll find some helpful hints on what to do in the article on servicing air conditioners on page 12. Here's some darn practical service dope, garnered by a reporter who "sat" on the job while it was being done.

A 'First' In Brewery Work?

New methods for doing old jobs in the commercial refrigeration field come to light daily. A Columbus dealer who thinks he has pioneered a "first" for brewery work reports on his work on page 12.

Two New Ways To Do It

Two new developments that may prove mighty interesting to air conditioning dealers—a new way of putting together central station conditioner cabinets and a means for cutting sun load through windows 80%—are reported on page 6.

A 'Gassy' Problem

Service men will learn much about field problems in refrigerants and oils from the material published on pages 18 and 19, taken from the studies just made public by one of the principal refrigerant manufacturers.

Jobbers Get Dressy

Progress in the ranks of the refrigeration parts and supply jobbers. One installs a "show" air conditioning job in his place of business, another adds some merchandising zip with a counter showcase. This and other jobber news on page 7.

Other Departments

Who's putting up locker plants and where, and other news of the refrigerated locker plant field on page 14. News of the commercial refrigeration field on page 5.

Wanted: New Words

If you've never heard of the science of "semantics," you may want to read the editorial on page 10. And after you've thought about it, maybe YOU can become an industry immortal by inventing some new words.

Lyle Challenges Air Conditioning Industry To Duplicate Feats of Automobile Makers

SYRACUSE, N. Y.—Citing the remarkable growth of the automobile industry since 1905, J. I. Lyle, president of Carrier Corp., speaking at the twenty-fifth anniversary dinner of the company, threw down the gauntlet in a challenge to the air conditioning industry to duplicate these accomplishments.

Rapid growth can only be accomplished by "continually giving the public a greater value and a greater service for dollar expended," Mr. Lyle declared.

"If some of you are old enough to remember the cars that were sold to the public in 1905 for prices from \$5,000 to \$10,000 and compare them with the car that you can buy today

Engineer Passes



GARDNER POOLE

Gardner Poole Dies; Former ASRE Head

BOSTON—Gardner Poole, 63, vice president of the Frosted Foods Corp. and a past-president of the American Society of Refrigerating Engineers, died here July 6.

An authority on the preservation of food by refrigeration, Mr. Poole was five times United States delegate to the International Congress of Refrigeration. During the World War he worked with Herbert Hoover as a "dollar-a-year" man in the fisheries division of the Food Administration.

Mr. Poole had held a number of positions of authority in the refrigeration warehouse field, having been president of the Commonwealth Ice & Cold Storage Co. of Boston, and later vice president of the Quincy Market Co.

Active in association work, Mr. Poole had served as president of the United States Fisheries Association, The American Warehousemen's Association, in addition to being a president of the A.S.R.E., which office he held in 1938-1939. At the time of his death he was chairman of the International Institute of Food Technologists.

N. Y. Servicemen Plan First State Convention

BUFFALO—Plans are being made for the first convention of the New York State Association of Refrigeration Service Engineers, reports John Bush, president of the organization.

Mr. Bush said he had been conferring with officers and directors in various parts of the state recently and that it had been definitely decided to hold a convention in the latter part of November. Date and place of the conclave are yet to be decided.

Mr. Bush said the majority of (Concluded on Page 4, Column 5)

Salesmen Form Own Firm After Utility Abdicates

SALT LAKE CITY—Salesmen formerly associated with Utah Power & Light Co., which recently dropped out of the appliance selling field, have banded together to open the Intermountain Utilities Appliance Store at 331 S. Main St. here.

Under the management of Reed Bigelow, more than a dozen of the utility's erstwhile appliance salesmen have pooled their assets and selling experience on a cooperative basis, following the same general plan as under the power company set-up, with individual salesmen working protected territories, free from competition by their own associates.

The store has opened as a complete electrical appliance dealership. (Concluded on Page 20, Column 4)

Union Contracts For Milwaukee To Be Amended

Salesmen and Servicemen Salaries, Closing Hours Subject of Agreements

MILWAUKEE—Minor amendments to the contract between local electrical appliance dealers and the Salesmen's Union, running to July 1, 1941, were agreed on after a three-hour session in which a committee of retail dealers met with union representatives.

The amendments concerned closing hours, salesmen's pay, a wage schedule for service department employees, and overtime pay for both sales and service workers. In the first two instances, where amendments were designed to correct a limited number of isolated cases, it was agreed that settlements would be made individually without changing provisions of the present contract.

The union had proposed an amendment to the agreement to provide for the closing of retail appliance stores on Saturday nights during the months of July and August.

Discussion showed that a majority of the retail stores are already closing on Saturday nights. It also showed that a limited number of stores located in the areas of Sears stores, which remain open every Saturday evening, felt that they would be unfairly discriminated against if required to close on that night.

Agreement was then reached on the proposition that the dealers and the union would jointly approve a (Concluded on Page 20, Column 1)

Universal Cooler Will Move To Marion, Ohio

DETROIT—To utilize a factory far better suited for the line production of commercial refrigeration equipment than the company has had before, Universal Cooler Corp. has acquired a plant in Marion, Ohio, and will move there in September and October.

Formerly the Susquehanna Silk Co., this plant lends itself better to material flow than does the sectional plant which has been occupied in Detroit, according to T. S. Pendergast, vice president.

Universal Cooler's new plant is of single-floor, sawtooth construction, with only one partition—which will conveniently segregate the machine shop. Thus all operations can be routed through one room.

In addition, the building is airtight, simplifying the heating and ventilating problem, with an air circulation (Concluded on Page 20, Column 2)

Job Grows



T. J. NEWCOMB

Westinghouse Joins Refrigeration and Laundry Sections

MANSFIELD, Ohio—The household refrigeration and laundry equipment departments of the Westinghouse Electric & Mfg. Co.'s merchandising division have been combined, it was announced last week by F. R. Kohnstamm, merchandising division sales manager.

T. J. Newcomb, who has been manager of the household refrigeration department, is named manager of the new department, which is to be known as the domestic refrigeration and laundry equipment department.

Westinghouse To Erect Big Warehouse

MANSFIELD, Ohio, July 16—The Westinghouse Electric & Mfg. Co. today announced plans for construction of a \$560,000 warehouse, bringing to \$1,500,000 the cost of an expansion program now under way at its merchandising division headquarters plant here.

Frank R. Kohnstamm, sales manager of the Westinghouse merchandising division, explained that the reason for the expansion is to step up production and warehousing (Concluded on Page 17, Column 3)

Furniture Group Hits Long Terms, Long Warranty

Would Put Guarantee In Dealer's Hands To Increase Margins

CHICAGO—Discontinuance by refrigerator manufacturers of the \$5 warranty charge and letting the individual dealer assume this risk was recommended by members of the merchandising committee of National Retail Furniture Association at a recent meeting here, as a means of extending the retailers' margin on electric refrigerator sales.

It was decided to appoint a committee to meet with manufacturers to discuss the subject, in advance of announcement of 1941 lines.

Dealers also recommended that maximum instalment terms on refrigerators be fixed at 30 months, and that "no down payment" practices be discouraged. Consensus was that, in the period immediately ahead, credit policies must be watched carefully.

Alco Makes 5 Sales Staff Appointments

ST. LOUIS—Several additions to Alco Valve Co.'s national sales organization, following the recent appointment of Richard S. Dawson as sales manager, have been announced by A. B. Schellenberg, president.

Charles C. Allen, formerly with Frigidaire, will have headquarters at Cleveland, and will cover the Detroit-Cleveland-Pittsburgh territory.

S. S. Fretz, manufacturer's agent, with headquarters in Jacksonville, Fla., will represent Alco for the entire state of Florida. Mr. Fretz formerly conducted a refrigeration jobbing business in Jacksonville.

Garrard & Co., 413 Bona Allen building, Atlanta, will represent Alco in Georgia and South Carolina. Walter M. Garrard, the principal of this company, was formerly connected with York Ice Machinery Corp.

Ben MacDougall, P.O. Box 624, Covington, La., formerly connected with United Cork Co., will handle the states of Louisiana, Mississippi, and Alabama.

SUMMER SALES STIMULI

W. Va. Utility Conducts Kitchen Essay Contest

FAIRMONT, W. Va.—The changes which half a century have made in the "homemaker's workshop" is the theme of the "90-40" kitchen contest now under way in the territory of Monongahela West Penn Public Service Co., and open to customers and employees alike.

Scheduled to run from July 1 to Aug. 31, the kitchen contest follows a simple plan, designed to emphasize upon contestants the many labor-saving advances which appliances have made possible in the kitchen between 1890 and 1940.

A drawing has been prepared of an 1890 kitchen, showing the housewife performing a lot of kitchen functions with the equipment of that day. From that picture, contestants are asked to name as many of those functions as they can, and then list the electrical appliance or electric application which has replaced the 1890 method of performing that task.

Then the contestant must write, in 50 words or less, what he or she likes best about some electrical appliance or method that is being used (Concluded on Page 20, Column 2)

Dubuque Dealers Join In Refrigerator Push

DUBUQUE, Iowa—First dealer cooperative refrigerator sales campaign in the history of Dubuque got under way July 1 with a "kick-off" banquet attended by 50 dealers, salesmen, and manufacturer representatives. Twelve dealers, selling eight brands of refrigerators, are entered in the campaign, which will close Aug. 31.

Supporting the drive is an extensive advertising campaign, built around the Modern Kitchen Bureau theme, "Twice the Value at Half the Cost." Spot announcements are being made four times daily over local radio station WKBB; 12 billboards at heavy traffic locations are being used during July; bus cards are being used in all city buses; and a series of six large-space advertisements (mentioning no brand names) will appear in Sunday editions of the Dubuque Telegraph Herald.

The campaign is being financed at a cost of \$3 for every refrigerator sold during the two-month period. Distributors pay 50 cents per refrigerator, the dealer pays \$1 for every (Concluded on Page 20, Column 2)

NEW TUTHILL Automatic FREEZETTE



Distributors all over the country are cashing in on the wide-open market created by the new Tuthill Automatic Freezette for frosted malts, soft ice cream, sherbets, ices and frosted fruit drinks. Installations like this make money for the small refrigeration dealer as well as the largest distributor. Get the amazing profit facts on our exclusive franchise program today.

**PROFITS
WAITING
EVERWHERE**

Self-contained, portable, really automatic, the Freezette is a "package" item you can sell easily to drug stores, restaurants, confectioneries, and scores of other outlets serving the public.

REFRIGERATION PRODUCTS DIVISION
TUTHILL PUMP COMPANY
939 EAST 95TH STREET
CHICAGO, ILLINOIS

DISTRIBUTORS!

Wire or write immediately for full particulars.

3 Century 15 Horsepower Direct Current Motors driving Refrigeration Compressors.

Century
Offers You a
Complete Line
of D. C. Motors

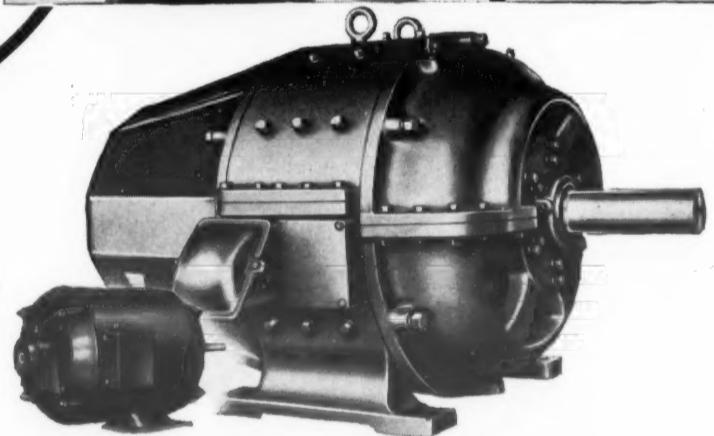
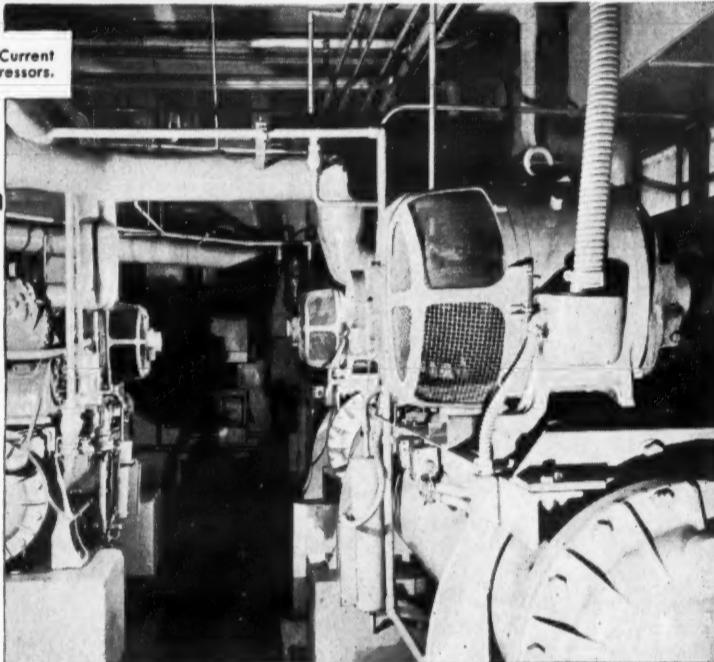
From Fractional to
300 Horsepower

To Meet Your
Refrigeration and
Air Conditioning
Needs

The complete Century line of Direct Current Motors includes a variety of types and sizes from fractional up to 300 horsepower. Furthermore, Century integral D. C. Motors have mounting dimensions interchangeable with Century A. C. Motor frames in sizes for which there is the greatest demand.

They are designed and built for the continuous heavy loads generally imposed by the modern air conditioning installations, as well as to operate quietly.

They are available in open, protected, drip proof and splash proof designs.



Century 3/4 Horsepower Direct Current Motor at 1150 RPM.
Century 250 Horsepower Direct Current Motor at 1750 RPM.

You'll find it will pay you to consult your nearest Century Motor Specialist and to get all the facts on Century's complete line of A. C. and D. C. Motors. The benefits of Century's years of experience, working in close cooperation with the air conditioning and refrigeration industry, are always available to you. Call in your nearest Century Motor Specialist today.

CENTURY ELECTRIC COMPANY

1806 Pine Street St. Louis, Missouri
Offices and Stock Points in Principal Cities.



One of the Largest Exclusive Motor Manufacturers in the World

**Philco Buys Part of
Radio Tube Concern**

NEWARK, N. J.—Purchase by Philco Radio & Television Corp. of "a substantial interest" in the National Union Radio Corp., local manufacturer of radio tubes, was announced last week by S. W. Muldowney, president of the tube company.

National Union will continue to operate as a separate company to manufacture its products and distribute them nationally under its own trademark, Mr. Muldowney said.

"The greater financial strength resulting from our connection with Philco, together with additional working capital which has been raised, will enable National Union to invest substantial amounts in our plant to further modernize equipment and increase capacity," he said.

Expected to comprise the board of directors of the company under the new set-up are: Mr. Muldowney, Henry L. Crowley, president of Henry L. Crowley Mfg. Co.; Paul V. Galvin, president of Galvin Mfg. Co., Chicago; Penn Brook, vice president in charge of factories for Sears, Roebuck & Co.; W. R. Wilson, controller of Philco; and Fred D. Williams, assistant to the president of Philco.

G-E Opens Display

NEW YORK CITY—General Electric Co. has opened a permanent display of products of its appliance and merchandise department at 570 Lexington Ave. here.

**FTC Charges Zenith
With Misrepresenting
Power of Radio Sets**

WASHINGTON, D. C.—Zenith Radio Corp., Chicago, is charged in a Federal Trade Commission complaint with misleadingly advertising the number of tubes contained in its radio receiving sets and the power and capacity of such sets for foreign reception.

The complaint alleges that the respondent has advertised, among other things:

"Zenith short-wave radios are guaranteed to bring in Europe, South America, or the Orient every day or your money back! . . ."

"Positively the greatest 1940 Zenith values ever offered . . . 10-tube superheterodyne . . . 11-tube superheterodyne . . . radio console with eight tubes . . . the amazing new 1940 eight-tube, three band Radiogram Zenith long distance radio . . . six tubes! Push buttons! Long and short-wave . . . six-tube heterodyne with wave magnet aerial, two-button Radiogram."

These representations and others made by the respondent, it is charged in the complaint, are misleading, for in truth the Zenith radio sets are not equipped with six, eight, 10, or 11 active, necessary, fully functioning tubes, but contain one or two, or more ballast non-functioning, or tuning beacon tubes, or rectifier tubes which do not serve as amplifying, detecting, or oscillating tubes and do not perform any recognized and customary function of a radio receiving tube in the detection, amplification, and reception of radio signals.

Contrary to the respondent's representations, the complaint continues, Zenith radio sets equipped with such tubes will not bring in broadcasts from London, Paris, Berlin, Moscow, Rome, and other points in Europe and from South America and the Orient in sufficient volume, free from static, to be distinctly heard at all times and under all conditions.

The complaint grants the respondent 20 days for filing answer to the charges.

**Electrolux Sues N. Y.
Stores On Name Use**

NEW YORK CITY—Electrolux Corp., vacuum cleaner manufacturer, has filed suit in the state supreme court here against Ludwig Baumann, Bloomingdale Bros., Abraham & Straus, and A. I. Namm & Son, to restrain the defendants from selling or advertising a tank-type vacuum cleaner not made by it as an "Electric De Luxe," "Gen-Electric De Luxe," "G. E. De Luxe," or from otherwise using the word "De Luxe" or "Lux" in the name of the machine.

Practices followed by the defendants and others selling a General Electric machine are misleading the public into believing they are getting an "Electrolux," it is claimed, when such is not the case. Some store employees of the defendants also have misrepresented the patent situation of the Electrolux cleaner, the plaintiff asserts.

The unfair competition complained of got under way, it is claimed, with a Consolidated Edison Co. "bargain package" campaign in which the cleaners were featured.

**May Refrigerator Sales
In Houston Area—2,197**

HOUSTON, Tex.—Total of 2,197 electric refrigerators were sold in May by dealers in the territory of Houston Lighting & Power Co. Total sales in the territory, which includes Houston, Galveston, Goose Creek, Rosenberg, Wharton, Freeport, Humble, and La Porte, reached a sales value of \$644,000 for the month.

Unit sales for May were as follows:

Appliance	Units Sold
Refrigerators	2,197
Ranges	7
Roasters	38
Washers	656
Ironers	25
Vacuum Cleaners	386
Radios	2,382
Air Conditioning Systems	3
Air Conditioning Units	14
Attic Ventilators	387

Sam's Selling Slants



V. E. ("Sam") Vining, merchandising manager for Proctor Electric Co., is the industry's most colorful salesman. This is the seventh of a series of Sam's famous "Selling Slants" messages to salesmen. An earlier series was published in the News in 1937, and later was published as a pocket-sized book.

KNOCKING

When you know what your knocking competitor is going to say—say it first.

That'll kill him.

A knocker feeds on ignorance and the inference that his competitor is hiding a weakness. If his competitor has hidden nothing, and stressed any point of weakness the knocker is done before he starts.

When you are courting your girl—a selling job of no mean proportions for most of us—don't hide that bald head in shame.

Let it shine.

It may blind her to other faults. Mention it once in a while to show you are proud of it;

Then tell her about the hair on your chest.

Then when your competitor refers to you as "that bald headed gazukus," she smiles at his ignorance and wonders that she ever even considered trusting her innocent self to him.

And that applies to merchandise as well as love.

IF YOU
BUILD A
BETTER

BEVERAGE COOLER MOUSE TRAP . . . THE WORLD WILL BEAT A PATH TO YOUR DOOR, TOO!

That is why the IDEAL BEER COOLER COMPANY

has become one of the world's largest exclusive manufacturers of capacity beverage coolers in seven short years . . . because the Ideal Beverage Cooler has consistently maintained its position as a better cooler from the very beginning.

FIRST

by introducing fast cooling, capacity, wet beverage coolers that really performed and fit the most accessible space perfectly at a time when consumers were absolutely sour on electrical beverage coolers.

SECOND

when dry coolers came into the market, Ideal introduced the unusual method of stopping the fan automatically with the compressor. Anyone who understands refrigeration knows the important advantage of this application over others where the fan runs continuously.

THIRD

this unique application was made possible by the creation of the special Ideal coil with its enormous primary surface plus its large secondary surface that does not obstruct the path of air regardless of the amount of ice that accumulates on it. Thus, the compressor's full capacity is utilized with longer running periods and accompanying lower box temperatures.

But . . . Ideal is not content to rest on its laurels with these three great firsts in the beverage cooler field.

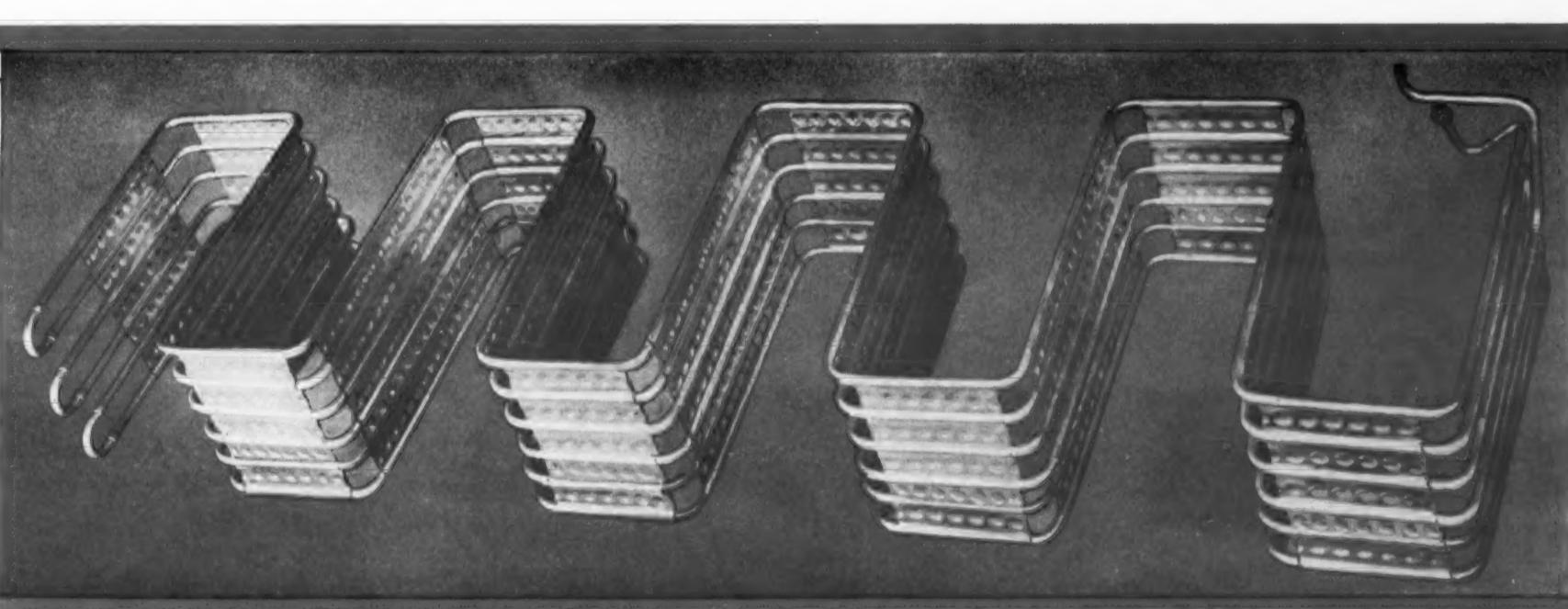
NOW...IDEAL ANNOUNCES....

another revolutionary new, dry capacity beverage cooler that solves the consumer's reloading problem - solves your installation cost problem and enables you to sell a market that you would normally consider too risky.

THE NEW IDEAL is a capacity dry beverage cooler with a reload compartment that will cool in less than thirty minutes! A self-contained, plug-in unit, which eliminates all installation costs!

CONSUMER CREDIT RISK is practically done away with because the new Ideal is constructed of entirely replaceable parts. In cases of repossession where extreme abuse has occurred, any part of the new Ideal can be replaced at a very small cost and by anyone who can use a screwdriver.

★
and, best of all,
the NEW
IDEAL
BEVERAGE
COOLER
is
LOW in PRICE!



Now for the First Time

you can sell the world's finest capacity cooler at a price well below the installed cost of ordinary beverage coolers.

Don't Miss this GREAT OPPORTUNITY

this amazing new cooler in your territory, if it is still open. Write for complete information at once, or better still, send in your order for one of these new Ideal Beverage Coolers today, for even with production at its seasonal peak, orders are coming in faster than they can be filled, and will have to be filled in the order in which they are received.

THE IDEAL BEER CO.
2953 EASTON AVENUE SAINT LOUIS, MISSOURI

'Neighborly' Type of Selling Is Best Approach To Farm Prospect, Say Greenville, Ill. Dealers

By T. T. Quinn

GREENVILLE, Ill.—This year's lower prices and recently completed rural electrification projects in and around Bond county have spelled increased sales of electric refrigerators and appliances to dealers in this county seat town.

Greenville is headquarters of the Southwestern Electric Cooperative, Inc., an REA project serving some 1,175 meters in Bond, Madison, and Fayette counties. While nothing of a special nature has been done by the cooperative in the way of promotion, outside of an "Electrical Jubilee" at Edwardsville earlier in the year to celebrate completion of several miles of rural line, farmers have proved exceptionally good prospects for electrical labor-savers of all types.

There are two live dealerships in Greenville—Anthony Electric Co., handling Frigidaire, and Bauer Electric Co., handling Kelvinator. The former is an "old-timer" in the appliance and specialty field, and has been in the business ever since the Delco-Light days; Bauer, on the other hand, is a brand new dealership in Greenville, setting up only in February of this year.

Interviews with these two dealerships brought out some rather interesting facts regarding the farmer as an appliance prospect, the type of merchandise he's most interested in,

and how you have to go about selling to him.

Of course, getting electricity was the foremost factor in making the farmer an electrical appliance prospect, but there are other angles today—angles which were not present a few years back—that put him in a preferred position for appliance purchasing and promotion.

For one thing, farm conditions have improved vastly in this territory during the past few years. There was a time when just about every farmer you talked to—that is, the young farmer—was going to get off the farm and into the city just as fast as he was able. He didn't like things at home; he couldn't see where he'd ever get anywhere staying there—and besides he could get a job in the city at \$6 a day—every day.

So why should he spend a lot of money on farm equipment, or equipment for the farm home, when he wasn't planning to be there very long, anyway?

Today's farmers, however, aren't planning to leave their lands for the city—except maybe to drive down to see a double-header baseball game once in a while. They have better crops, better prices, and none of the pressure of city living, and they're not going to give up those things.

What they're after now is to make

their farm homes just as comfortable as those in the city. And now that electricity is available to them, refrigerators and other appliances figure prominently in their purchasing plans.

Although he's a much better prospect than he used to be, the farmer is still a trader—he's been brought up in the tradition—and he's inclined to look around a long time until he's convinced he's found the top buy for the low dollar.

So price is a mighty important item in dealing with him.

He likes to shop around, when he comes to town, and see what the different dealers have to offer—and he just won't be sold until he's made up his mind as to what he wants and how much he's willing to pay for it.

"Selling" to him, as a straight-out proposition, is taboo—you have to "visit" with him, explain the advantages—to him—of your particular product, and edge him gently toward a decision.

Service Clinches Sales With Rural Prospects

Above all, you've got to be able to give him service—and plenty of it—on any equipment you sell him.

Fall down on this end of your agreement just once, and you've lost a customer for good. Not only that, but chances are you've lost most of his relatives and some of his friends as well.

Aided by a 46-unit month during May, Anthony Electric Co., Frigidaire dealer, is now working on its third carload order of refrigerators so far this year. Head of the company is E. V. Anthony, an old-timer in the specialty field who started selling to farmers during the Delco-Light period, assisted by his son, J. W. Anthony. Two other salesmen also are employed by the company.

In addition to the "in" that Mr. Anthony's 22 years of specialty selling experience give the company with rural customers, the fact that it also handles wiring supplies, both to contractors and to farmers directly, has given the company quite an edge on much of the new business that extension of REA lines has brought.

Well managed, well thought of, and in a financial position to buy equipment in large quantities when the market is "right," Anthony Electric understandably commands a major share of the appliance and allied business in Bond county. The company has the Frigidaire franchise in two counties—working through a sub-dealership in Vandalia—and handles Maytag washers and Philco radios in its home county only.

Refrigerator sales this year have been fairly well split up between town and rural buyers, Mr. Anthony reports, with no trade-ins of mechanical units to speak of. All such trade-in models are easily disposed of, either to friends of the original purchaser or to farm homes on the lookout for a "good buy."

Greenville Range Ratio Now 4-To-1

Encouraging to the company has been the reception of Cold Wall models. Most of such sales have been to town users, but several have gone to farm homes as well, Mr. Anthony says. At least one 8-foot Cold Wall unit was included in the May sales to rural prospects.

The farmer is a "close" buyer, Mr. Anthony admits, but he insists that farm homes are essentially prospects for "quality" equipment. When he gets around to buying, he has a pretty good notion of what he wants, and the dealer's job is to convince him that his merchandise will fill the bill.

Greatest proportionate sales increase this year, however, has come in the electric range field, Mr. Anthony says. While sales volume doesn't begin to match that of refrigerators, ranges this year have gone at a pace 'way ahead of any time in the past.

Sales ratio of refrigerators to ranges so far this year, Mr. Anthony estimates, has been in the neighborhood of four to one—four refrigerators to a range. Last year, he says, the ratio was nearer 20 to one. So he's looking to electric ranges to be a real volume producer any year now.

Step-Up or 'Step-Off'—It All Depends

In "step-up" selling, watch your step—that's the note of warning sounded by Fred H. Bauer, youthful head of Bauer Electric Co., Greenville's Kelvinator dealership.

If you step too far in your "step-up" work, you're apt to find yourself right in the middle of a lost sale, Mr. Bauer says. "When a customer comes in to look at a \$114 unit, it's not a hard task to sell him on a \$140 model; when he inquires about the \$140 model, you can usually work him up to the \$170 class.

"But don't make the mistake of rushing him from the \$114 to the \$170 range—you'll scare him right out of being a prospect at all, as far as you're concerned. It's usually too big a jump for his pocketbook to stand. He may put up with a \$25 boost, but expecting him to go along for \$55—about half of what he originally intended to spend for the refrigerator—is just asking too much."

In Greenville only since February—before that, he had a small dealership in Pleasant Mound—Mr. Bauer has been more or less specializing in rural selling. He is the firm's only full-time salesman at present, but employs a paint-and-wallpaper man

on a part-time basis and has a "look-out" in Sorrento, a neighboring town.

Most of the company's sales have been to farm homes, and most of the units have been "sixes"—but that's all right with Mr. Bauer. In a couple of years, he expects, many of his 1940 owners will decide that their 6-foot units don't afford all the space they could profitably use—and he'll be right on hand to sell them 8-foot models.

The farmer has his own price field, Mr. Bauer finds—and it's a hard job to sell him around it, even if such a move would be to his definite advantage. About all a dealer can do is help the farmer "shut the door" on his own decision, he declares.

Best sales method Mr. Bauer has found for working with farmers is to load up his trailer with appliances and make a tour of rural homes in a certain section. He just "visits" with farmers and farm wives, connecting up the appliances and letting the prospect's curiosity lead the way in demonstrating its uses and enlarging on sales features.

Rarely is a sale made on the first of such calls, Mr. Bauer finds. The farm family usually wants to talk it over, promising to call at the store if and when it gets ready to make a deal. And farm prospects keep their promises, Mr. Bauer finds.

His store is located a block off the public square, and therefore isn't so hot from a volume floor traffic angle. But when persons do come into the showroom, they're real prospects. Maybe they say they're just looking around, but Mr. Bauer believes that when they go that far off their regular route, they're interested in a refrigerator or range, and have a real need for one. So he doesn't have to waste many selling talks.

Another valuable sales-puller for the company is the fact that, in E. M. Miller, it has one of the town's two service men. And rural buyers bank heavily on the service angle—but no heavier than Mr. Bauer does in his selling work. He talks up his service "department," and his service man, in turn, talks up new appliances to present users.

Besides being an invaluable source of new-sale leads, the service operation has more than paid its own way, Mr. Bauer reports. Radio service work has been especially good.

Refrigerators Follow Radios In Farmer's Preference

Radios have been the No. 1 farm appliance, in point of preference, Mr. Bauer said. As soon as a farm home gets on the high line, it wants a radio. Refrigerators rank second in preference, he reports, with washers in third position.

The company has had a number of used electric refrigerator trade-ins this year, but they've been no problem. In fact, used models have furnished several good leads to new-model sales.

Mr. Bauer's practice on used refrigerators is to appraise it on the basis of its probable re-sale value, considering this year's lower prices on new equipment. If the unit is going to entail a lot of reconditioning, he junks it—otherwise he fixes it up and advertises it as a leader, on the basis that it may be returned for full credit on a new model within a certain time limit.

Good used models can be advertised so as to draw a lot of floor traffic, Mr. Bauer says—and at today's price set-up, it's not at all hard to sell the used-model prospects up into the new-model class.

New York Servicemen Plan First State-Wide Meeting

(Concluded from Page 1, Column 2) State officials favor Syracuse as the site of the first convention but that there has been some pressure for Albany.

The new organization will receive its state charter at that time. The state association was formulated at the last national convention in Chicago by Mr. Bush and several other association leaders in New York state. It went into operation March 21, electing Mr. Bush president.

Mr. Bush said the association was formed "to bring employer and employee together on a level plane. We are definitely not a labor organization. Our objective is primarily a social one."

You Get
All These Advantages
in the Full Range of
ALCO
Evaporator
Pressure
Regulators

Only Alco Evaporator Pressure Regulators offer you **ALL** of these advantages:

- Exceptional sensitivity of control.
- Simplicity of construction—lighter weight—more compact.
- All sliding parts have been eliminated from the friction-free Alco floating pilot—assuring maintenance of selected pressure.
- Two built-in strainers.
- Highest degree of serviceability—replaceable cage construction—all internal parts can be removed without taking main body or flange out of the line.

THE exacting and rapid performance of Alco Evaporator Pressure Regulators insures successful operation on either single or multiple systems. They are designed to accurately maintain evaporator pressures regardless of sudden load changes or fluctuations in suction pressure.

All Alco Evaporator Pressure Regulators are designed for use with any refrigerant. Precision workmanship and use of the highest grade materials assure long life and uninterrupted service.

Alco's traditional accuracy and efficiency—made famous through Alco's complete line of Thermo Valves—is now available in a full range of Evaporator Pressure Regulators.

For further details and complete information—see your Alco jobber, or write direct today.

ALCO VALVE COMPANY
2620 Big Bend Blvd.
St. Louis, Mo.



Engineered Refrigerant Controls
FOR HIGHEST EVAPORATOR EFFICIENCY

Test Shows New Screen Material Reduces Solar Load on Windows Up To 80%

CHICAGO—Data on the reduction of the solar load through windows by the use of the Ingersoll "Koolshade" sun screen is offered in a booklet recently released by the Ingersoll Steel & Disc Div., Borg-Warner Corp., here.

The new screen is constructed on the principle of a venetian blind, using tiny flat wire "slats" to deflect the sun's rays from glass surfaces. Vision is not obstructed.

The booklet presents tables, attested by Pittsburgh Testing Laboratory, giving solar heat gain values through windows protected by the Koolshade, and through bare single window glass. "Effective transmittance" (conduction) factors are also given.

Tables are presented covering calculations at four latitudes, ranging 30° latitude to 45° latitude, for different times of the day.

A specific example is made of a building in Pittsburgh, latitude 40°, to be cooled to 80° F. dry bulb. The problem is to find cooling load through south windows shaded with a Koolshade screen.

By use of the correct table it is determined that the coefficient of transfer for solar heat transmitted through a window shaded with a Koolshade screen is 6 B.t.u. per sq. ft. per hour. The coefficient of effective transmission is 1.00.

Figuring a 15° F. temperature differential the degree difference is

multiplied by the coefficient of effective temperature thus, $15^\circ \times 1.00$ equals 15. To this is added the coefficient 6—making a total of 21 B.t.u. per sq. ft. per hour for the window having south exposure at 12 o'clock noon.

If the window were not equipped with the Koolshade screen, and the bare glass were exposed to the sun's heat, the coefficient of transfer for the same time and place is given as 74. As before, the conductive transmittance factor (conduction) must be added, making a total of 74 and 15 or 98.

This would indicate that the heat reduction through the glass is reduced from a factor of 98 to 21—or approximately 80%, permitting only 20% to be delivered to the room.

This compares as follows with the "Solar Radiation Transmitted Through Shaded Windows" as given on page 150 of the 1940 A.S.H.V.E. Guide. The table follows:

Performance of Awnings, Shades, and Blinds

Type of Appurtenance	Finish Facing Sun	% Delivered To Room
Canvas awning	Plain	28
Canvas awning	Aluminum	22
Inside shade, fully drawn	Aluminum	45
Inside shade, one half drawn	Buff	68
Inside venetian blind, fully drawn	Aluminum	58
Outside venetian blind, fully drawn	Aluminum	22

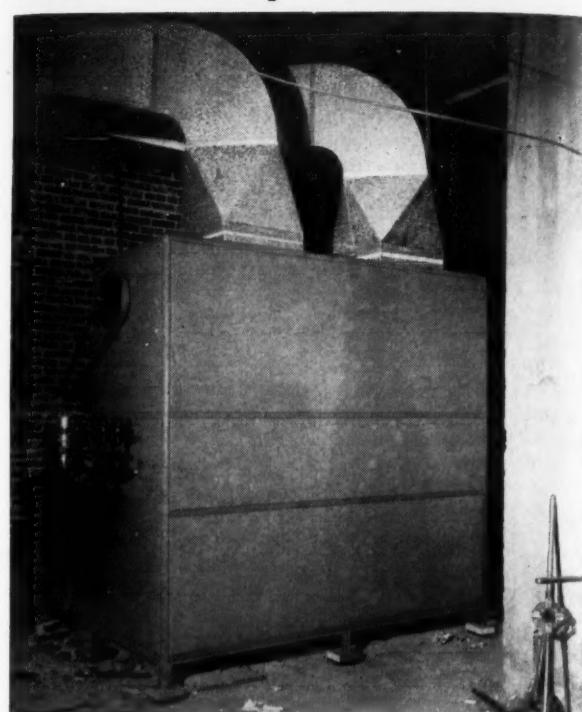
According to sales representatives of the company, cost of "Koolshade" applied to double hung windows is approximately the same as boxed awnings, or about 50 cents per sq. ft. for the screen material alone. Costs are slightly higher on outward opening casement (steel or wood) windows, where special applications have to be made.

It is well known to air conditioning engineers that in the case of a loft (office) building, a large percentage of the cooling load is found in the windows. The Koolshade screen offers an effective method of reducing heat loads, particularly in applications where other methods are not suitable.

Kansas Store Gets 150-Ton System

WICHITA, Kan.—A 150-ton Carrier air conditioning system employing a centrifugal-type compressor is being installed in Rorbaugh-Buck Dry Goods Co., one of Wichita's largest stores. The system is designed to maintain an 80° F. temperature within the store during even the hottest weather.

Built With 'Lindsay Structure'



Flexible 'Structure' Forms Housing on Central Station Cooling Unit

CHICAGO — Lindsay Structure was used in making the housing structure for the 25-ton air conditioning system installed in the Board of Trade building here. Peerless of America, Inc., made the equipment which is used in the installation.

This new method of construction was invented and developed by Harvey B. Lindsay, president of the Dry-Zero Corp., and has been used in refrigerated trucks and in other types of structures to which it lends itself. The company builds no cabinets itself, but fabricates and sells the necessary Lindsay Structure to specified dimensions and details.

Peerless of America, Inc. has adopted the use of Lindsay Structure for its central station type of air conditioning unit, but has not adopted the structure for use on cabinets in its other lines.

RADICAL DEPARTURE

Claim made for Lindsay Structure is that its radical departure from conventional methods of putting together steel sheets and framing gets full structural strength from the sheet metal—generally thought of only as a covering material—with the result that unusual strength and rigidity with relatively light weight is achieved.

The panel sheets, framing members, and fittings can be assembled with a socket wrench, "like a Meccano set."

The structural strength of the sheets is made available by pulling the sheets into tension between the framing members. These "pre-tensioned" sheets instantly resist any

moving of the framing, it is said, and the load is distributed over their entire area. The sheets are fastened to the framing without the use of rivets or weld points. The Lindsay Structure offers ease of assembling and dismantling from the outside, equivalent to the simplest bolted construction.

NO WELDING USED

Cabinets can be erected in all sizes and styles, since standard Ls materials are fabricated to within $\frac{1}{2}$ inch of any desired dimension. All materials are marked to facilitate erection. Parts are assembled without riveting or welding, and no cutting or fabrication is necessary. Size of the finished structure can be altered by adding or removing panels.

In the Lindsay Structure frames for inspection doors are fastened directly to the Ls frame or spot-welded to the panel sheets. If desired, doors can be replaced by regular panel sections of the same dimension.

Insulating material can be placed between the wall and lining by fastening furring strips to the flanged channels.

From the manufacturer's or contractor's point of view, say its proponents, Lindsay Structure materials make it possible for him to build special cabinets and enclosures of any size or shape for specially designed equipment or to conform to irregular space requirements, yet at the same time the parts can all be made by quantity production methods so that the cost is nominal.

Air Conditioning Essential To Speed

Materials For National Defense

CAMBRIDGE, Mass.—Air conditioning will play an increasingly important part in the government's preparedness speed-up program, predicted Dr. Willis H. Carrier, chairman of the board, Carrier Corp., at the first annual Air Conditioning Institute held recently at the Massachusetts Institute of Technology.

Citing the case of American munitions plants during the World War, where humidity control in fuse loading assured perfect operation of time mechanisms on shells and bombs, Dr. Carrier contended air conditioning will prove a great help in controlling the accuracy and quality of other vital war devices and materials.

Furthermore, air conditioning will make it possible and practical for large industrial plants to operate 24 hours a day, every day of the year if necessary, he pointed out.

During the last World War, Dr. Carrier said that his firm cooperated with the government in finding the answer to one of the vexing problems of shell manufacture. It was found that unless humidity conditions were rigidly controlled during manufacture, devices for timing shell explosions could not be uniformly accurate.

Airplane factories also are finding air conditioning a boon in their "doping" rooms. Technically known

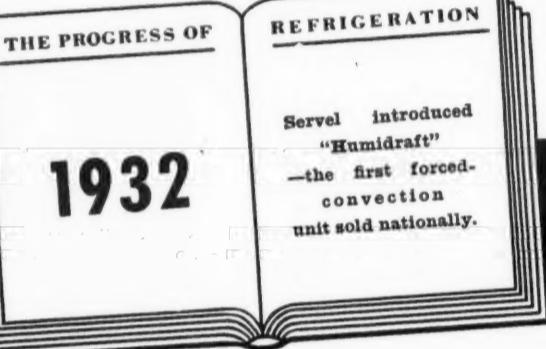
as acetone, this "dope" is a health hazard for workers, in addition to being very expensive. Recovery of much of this "dope" from the air through a secret air conditioning process, has resulted in a considerable saving in health and dollars.

Among other applications where air conditioning is proving helpful are in gun turrets of naval vessels, ammunition factories where volatile liquids are stored, and in air raid shelters and gas mask manufacturing for the protection of the public.

Rare Books Protected By Electrostatic Air Cleaner

RICHMOND, Va.—Rare and valuable books stored in the new Virginia State Library here will be protected by electrically cleaned air supplied from a Westinghouse "Precipitron." Five units having a total capacity of 57,750 c.f.m. will protect all books and manuscripts stored in the building.

In addition to removing ordinary dirt, the electrostatic air cleaners are said to eliminate minute particles of air borne sulfurous compounds, which cause deterioration in book papers.



There Is No Substitute For Experience



program through the heat of mid-summer.

If you are interested in a line that is "hot" twelve months out of the year, a note on your letterhead will bring full details. Write today to Servel, Inc., Electric Refrigeration and Air Conditioning Division, Evansville, Indiana.

NO VACATION THIS SUMMER!

THE boss and the office force may take "time out" in the heat of Summer. But refrigeration systems must work overtime at their jobs.

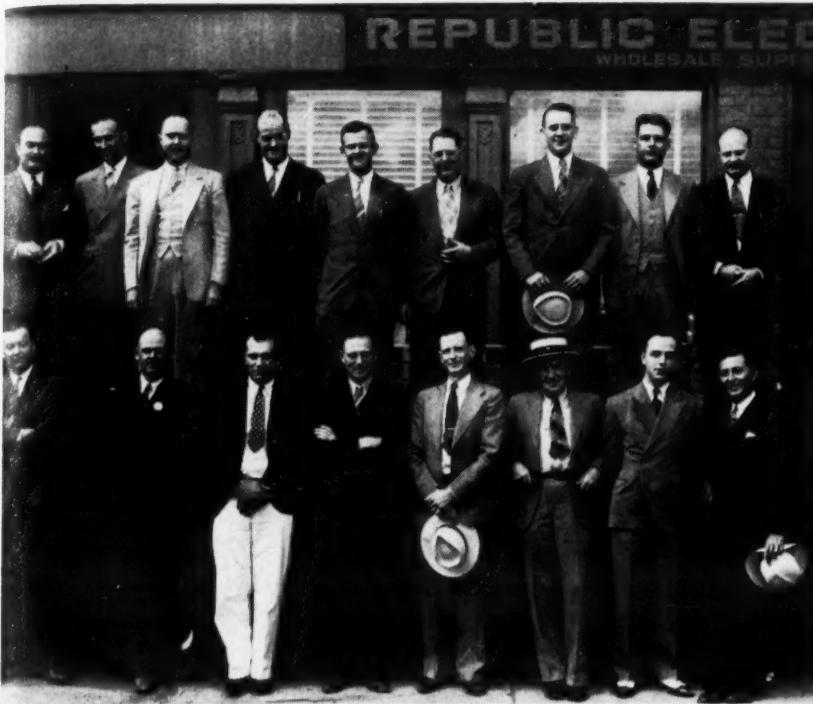
It is during these "dog days" that the quality and stamina of Servel "Silver Fleet" machine units win the wholehearted approval of users, dealers and service men. For, when the going gets tough, Servel units stand out head and shoulders above the crowd.

Word-of-mouth advertising and repeat business extend the Servel distributor's sales far beyond the normal "season." What's more, freedom from service worries enables him to drive ahead with his sales

SERVEL

COMMERCIAL REFRIGERATION
AND AIR CONDITIONING

Midwest Jobbers Meet Suppliers



Refrigeration parts and supply jobbers mixed with manufacturers' representatives when Midwest jobbers met at Republic Electric Co., Davenport, Iowa jobber. Here's identification for the men pictured above:

(Top row, left to right) K. B. Thorndike, Detroit Lubricator Co.; Marc Shanc, Feeders Mfg. Co.; M. W. Knight, Peerless of America, Inc.; Bob Anderson, Imperial Brass Mfg. Co.; Joe Page, Detroit Lubricator Co.; Archie Fait, White-Rodgers Electric Co. and Marlo Coil Co.; Jim Moravec, Penn Electric Switch Co.; K. Maginot, Dayton Rubber Mfg. Co.; A. W. Barber, Delavan Engineering Co. (Bottom row, left to right) Tom

St. Louis Jobber Installs 'Show' Cooling System In Its Own Quarters

ST. LOUIS—To show prospective customers, contractors, and service men how a complete air conditioning system functions in actual operation, Brass & Copper Sales Co., refrigeration supply jobber, recently installed a 10-ton system in its offices here. The new system, which will provide comfort for employees and visitors, is made up of equipment sold by the organization.

Because the system is a "show job" in the true sense, the company wanted as complete an installation as possible, incorporating the most up-to-date features to be found in an air conditioning system of this size and character.

Installation was made in accordance with the A.S.R.E. code, and designed to comply with the provisions of any code which may be passed by the city of St. Louis in the future.

Refrigeration is supplied by a two-speed Par compressor, designed for use with an evaporative condenser. This unit operates as either a 5 or 10-hp. system from White-Rodgers thermostats, depending on the load.

Mueller solder fittings and Revere type "L" copper tubing were used in the hook-up.

An Acme Industries evaporative condenser, installed on the balcony of the store, is used to remove heat from the refrigerant. The water pump and fan on this unit are both synchronized with the compressor, and arranged to start and stop as the compressor operates.

The condenser has a galvanized iron internal liquid receiver which is used as the operating receiver for the storage of refrigerant when the unit is pumped down for the winter. Superior line shut-off valves are used in the piping to and from the external receiver.

An Acme oil separator was installed, and equipped with sight glasses in the oil separator as well as in the oil return line to the compressor crankcase, effectively demonstrating the efficiency of the separator in actual operation.

Vibration is eliminated from refrigerant and water lines by the use of Chicago Metal Hose "Vibrab-Sorbers." These flexible connections were also installed on the suction and discharge lines to the evaporative condenser and to the suspended condenser, a 10-ton McQuay unit.

Cooling is supplied from this direct expansion conditioning unit, which is equipped with air filters, coil, blower, and fan motor. Dampers are provided to control the volume of fresh

and recirculated air. The conditioned air is distributed by means of a duct system extending to the private and general offices.

A large Henry Silica-Gel dehydrator is installed in the liquid line with by-pass piping, the by-pass connections being arranged by means of Henry "Freon" angle shut-off valves.

Superior liquid line indicators are used in the liquid line at the condensing unit and also at the suspended conditioning unit.

An Alco liquid refrigerant solenoid valve and Sporlan thermostatic expansion valve are used to control the flow of refrigerant through the McQuay suspended conditioner.

Installation work was handled by the Sodemann Heat & Power Co., air conditioning contractors of St. Louis.

Free Advertising In House Organ Offered By Wickham Supply

LINCOLN, Neb.—Rebuilding household refrigerators and commercial condensing units, including various hermetic models, is the principal business of the J. F. Wickham Supply Co. here.

The company also circulates a small mimeographed "house organ" which contains free classified advertisements inserted by refrigeration firms and service men who have new or used equipment for sale.

Mr. Wickham states that the firm's refrigerator rebuilding activity is strictly wholesale and if a customer of one of the firm's accounts sends in a refrigerator, the customer is billed at list and the account is given full credit for its share in the transaction. Mail inquiries concerning rebuilding are referred to a dealer in that locality.

The firm handles the Par line of refrigeration machines and has recently taken on the Kelvinator line of commercial refrigeration.

According to Mr. Wickham, the firm rebuilds 50 sealed units and 300 open type units per year, of which 50% are commercial refrigeration compressors. Prices on reconditioning of sealed units are currently as follows; net:

Frigidaire Meter Miser	\$27.50
Grunow	26.50
Majestic	32.50
G-E DRI, DR2	34.50
G-E SD40, DA1	35.00
G-E D40, D41, DR4	54.50
G-E DR5, D50	65.00
Electrocold or Coldsport (open)	21.50
Norge Rollator (small)	10.00

Mr. Wickham reports the market for refrigeration equipment, especially for milk cooling, dairy equipment, liquid cooling, and beer cooling is active in the Lincoln area this

spring. He points out that much of the refrigeration equipment in service is between ten and twelve years old and badly in need of replacement.

If the large Nebraska farms get enough moisture for a good crop this year, Mr. Wickham believes that 1940 will be unusually active in the refrigeration trade. The past five years have been considered "dry" seasons, and the farmers are looking forward to good crops (from present indications) this year.

The Wickham house organ goes to a mailing list of some 300 customers in the valley of Nebraska and northern Kansas. A recent "classified ad" page in this circular reads as follows:

From ONE DEALER TO ANOTHER:

Lester's Electric Co. at Fairbury, Nebr. have Four Copeland 5-foot refrigerators One General Electric 5-foot refrigerator all in good operating condition. These are for Sale at a reasonable price. If interested write to the attention of Earl Dove.

A 1/2-hp. Ice-O-Matic air cooled compressor, completely overhauled is listed for sale by Walt Spargo 2407 North 32 St., Lincoln, Nebr. Contact Walt if interested.

Artic Refrigeration Service 713 No. 17 St., Lincoln, Nebr. are in the market for some used domestic refrigerators. If you have some you wish to dispose of, write or call this company and ask for Ned Waechter or Lon King.

Counter Display Case Is Silent But Effective Member of Baltimore Jobber's Sales Force

BALTIMORE—A display case featuring usually slow-moving items is being used as an "extra salesman" at Parks & Hull, parts jobber here. The case, placed flush with the counter, carries a display of these items with special prices as an added come-on.

The displays are left in the case for three weeks or a month, being changed at this interval to keep service men on the constant look for bargains in the featured merchandise. It has been a very successful means of turning over stock that has been gathering dust up to the time the idea was tried.

The firm's salesmen have been successful this year in merchandising other items on aggressive salesmanship. An over-the-counter and direct contact promotion resulted in the sale of over 1,000 driers since the first of the year.

As an "add-on" item in selling, a special mechanics hand cleaner has been featured and by pushing this item to customers the salesmen have moved several cases of this cleaner



(Left to right) Bill Schulte, Bill Thomas, and Preston Burton, salesmen for Parks & Hull, Baltimore parts jobbing firm.

this year, making it another extra-income item for the firm.

George J. Roche is manager of the Parks & Hull jobbing operations.

It's Portable
It's Profitable

SAVES CALL-BACKS, DELAYS—
PAYS FOR ITSELF OUT OF
GAS and OIL SAVINGS



FITS IN THE BACK OF ANY CAR—even a motorcycle compartment—The Dayton V-Belt Service Kit gives "on the job" V-Belt replacement service for all leading makes of automatic refrigerators. Saves call-backs, delay, customer squawks.



OPEN ON THE JOB—the easy to handle Dayton V-Belt Service Kit includes an assortment of 43 fractional horsepower V-Belts, which are visible at a glance—also a Ready Reference V-Belt Replacement Catalog and the handy V-Belt Matchometer for quickly measuring worn-out belts and instantly identifying the correct replacement Dayton V-Belt.



EASY TO HANDLE—compact, tough and durable, telescoping* case of Swedish Fibre, richly finished in brown—with heavily reinforced corners and steel edges—strong leather handle and all-round web strap.

*Expands to hold 88 Belts if desired.



80% OF V-BELT REPLACEMENTS for household refrigerators are included in the assortment of 43 Dayton V-Belts for all leading makes such as Frigidaire, General Electric, Kelvinator, Norge, Servel, Westinghouse and others. Complete with V-Belt Matchometer, Replacement Catalog and Telescopic Carrying Case—saves call-backs, delays—pays for itself.

ASK YOUR DISTRIBUTOR FOR DETAILS, OR WRITE TO
THE DAYTON RUBBER MANUFACTURING COMPANY, DAYTON, OHIO
WORLD'S LARGEST MAKERS OF V-BELTS

WINDOW DISPLAYS

J. Walter Johnson, Noted Display Designer, Offers Practical Suggestions on Display Technique That Any Dealer Can Use

PORLAND, Ore.—"You're cheating yourself," is J. Walter Johnson's admonition to any refrigerator and electrical appliance dealer who is not collecting full dividends from his display windows.

"Store rent is based on sidewalk circulation," said Mr. Johnson, veteran display manager of the Powers Furniture Co. and winner of 128 cash and trophy prizes for his artistry in window display. "Appliance dealers spend hundreds of extra dollars for rent in order that they may have show windows to draw traffic into their stores."

Therefore, Mr. Johnson avers, a dealer who does not make full use of his expensive window space is cheating himself out of those extra dollars. A dealer who doesn't take full advantage of his window space might just as well save rent by maintaining his business in an upstairs location.

Questioned about methods by which refrigerator and electrical appliance dealers might achieve successful windows, Mr. Johnson outlined the following:

WHAT TYPE OF WINDOW BEST ADAPTS ITSELF TO DISPLAY PURPOSES?

When the Powers Furniture Co. was recently remodeled, Mr. Johnson was asked to design the windows. His first suggestion was that the floors of the windows be set low, down to street level or even an inch or two below the sidewalk surface, it being his contention that the show window is like a stage, and all theater-goers like full view of the stage.

Another request was that the plate glass windows should not be marred by dividers. He wanted the windows to be spacious and the walls to be finished with flat white paint, with no tricks in architecture to detract from the merchandise on display.

He also asked that the floors of the windows be carpeted in plain black.

WHAT TYPE OF LIGHTING GETS BEST RESULTS?

"I have found that fluorescent lighting adds 100% to the effectiveness of a display window."

ARE BACKLESS OR CLOSED DISPLAY WINDOWS RECOMMENDED?

"My answer to that question is, emphatically, closed windows. The large department stores, experts in merchandising, would choose the most effective method of window

display—and what type of window do you find in every department store in the country?

"It seems to me that a definite disadvantage of open displays is the fact that a person on the street can glance into your store. He can see the exact number of customers in the store, or notice the preponderance of salesmen over customers at slack times during the day. The rapid impression gained from such a glance isn't often in favor of the store."

WHAT KINDS OF WINDOWS ATTRACT MOST ATTENTION?

"Any theme having human interest is bound to attract attention. People are more sentimental than they care to admit, and sentimental themes prove particularly effective. Remember that you are trying to get the attention of the shoppers who hurry by your store as well as to get the attention of 'window shoppers.'

"My idea is this: it takes the average person from three to four seconds to pass the average show window. There must be something in that window compelling enough to catch his attention in those few seconds, so that he will stop for a further investigation."

For instance, there might be the figure of a man, reclining. The passerby stops to see just what that man is doing, reads the placard for an explanation. Since the last and most emphasized word on the placard is the name of the refrigerator in the display, his final glance rests on the refrigerator. That is what he remembers.

"People like to look at other people. If there are figures in your window, you've taken the first step toward human interest. If those figures are doing something interesting, you know that the window will attract attention."

"The drawing power of a human-interest story, simply told, is much greater than that of a modern or mechanized display."

HOW DO YOU KNOW IF A WINDOW DISPLAY IS A GOOD ONE?

"Go stand on the sidewalk a few yards from the window. Watch the people passing by. How many give the window one glance and walk on? How many stop to give your display their closer attention? How many are so interested that they walk into the store after a good look at the window?"

"You can judge your window by the results it brings."

'Human Interest' Is Key To Traffic-Stopping Windows



Statistics in a sales argument can be dramatized effectively, as is demonstrated in this window designed a year or so ago by J. Walter Johnson of the Powers Furniture Co., Portland, Ore. Note how attention is centered on the one thought of the display.

Human interest, introduced artistically in this window designed by J. Walter Johnson, stopped and got the attention of many a passing Portlander.

HOW CAN A SMALL STORE, WITH NO DISPLAY MANAGER, MAINTAIN EFFECTIVE WINDOWS?

"The contest method has been used with excellent results. The store salesman takes charge of window displays, the assignments rotating weekly. A set allowance is made for display materials to be purchased for each window; the salesman sets up his window by himself. A cash award is offered for the best window over a certain period of time."

"Such a method provides the necessary incentive for provoking ingenuity on the part of the salesmen; attractive windows and better business are the welcome results."

HOW DO YOU GET IDEAS FOR WINDOW DISPLAYS?

"(1) I watch all kinds of window

displays. I notice which windows catch my attention, then analyze the eye-compelling factors utilized in the display."

"(2) I keep on the alert for figures or statistics which can in some way be dramatized to make a good display."

"(3) When in search of an idea I leaf through magazines, giving special attention and analysis to those advertisements which are so attractive that I feel compelled to stop and read them."

"A post card from a refrigerator manufacturer once gave me an idea for a window display: we built a reproduction of a refrigerator ice tray, 7 feet in length, and filled it with ice cubes (the cubes made of beaverboard and painted white, green, blue). A refrigerator, plus this huge up-ended ice tray, and a placard, 'All the ice you want,' made up a window which really sold refrigerators."

"By keeping on the alert, ideas for refrigerator displays will occur to you so plentifully that you will have only to stop and choose the ones which can be worked out with the most drama."

WHAT MATERIALS DO YOU USE IN MAKING WINDOW DISPLAYS?

"Beaverboard and showcard paint are essential. I use beaverboard for the cut-out figures. A small drawing or cartoon may be enlarged by the square method if you aren't an artist. Trees, shrubbery, and backgrounds may likewise be made of beaverboard and painted with showcard colors."

"Dealers who aren't sure of their artistic ability may secure expert talent for their window decorating jobs by contacting the art teacher (Concluded on Page 9, Column 1)

A SINGLE CONTROL *Universal in Application*

THE NEW **POLARTRON**

FOR PRESSURE CONTROL UP TO 1 H.P.A.C.

Separate "On and Off" Knobs ★ Universal Range ★ Capillary Pressure Connections ★
Fewer Models to Stock ★ Minimum Free Service ★ "Cooling Control" on Cut Out or Cut In ★ No Short Cycling
★ Polartron Equipped Compressors can be Converted to Produce Frost-Free Constant Cold

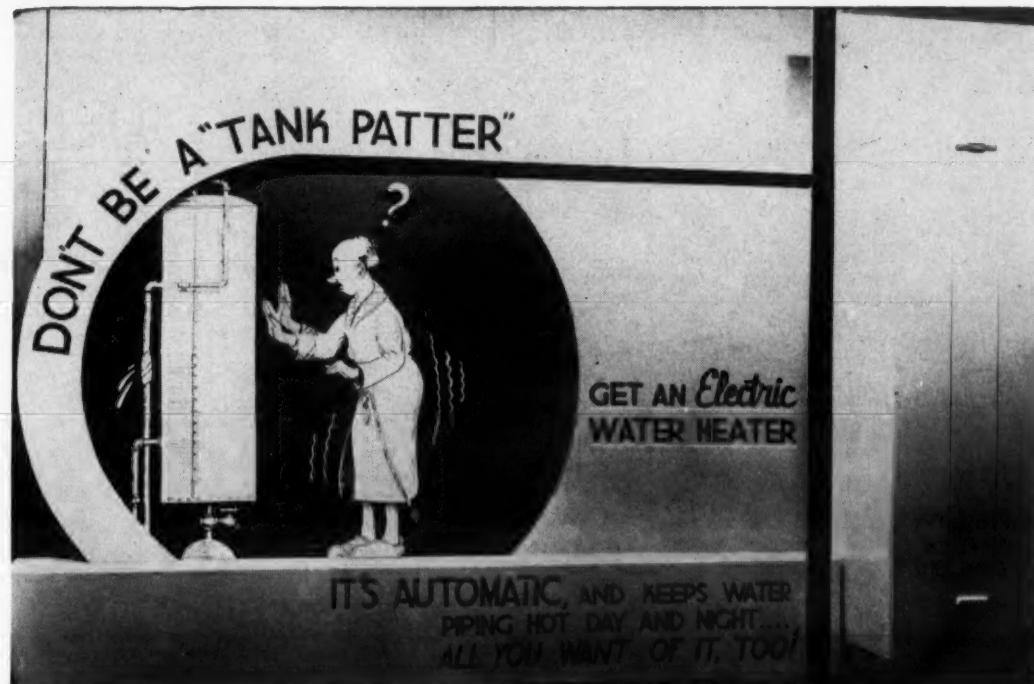
Note these Advantages

MINNEAPOLIS-HONEYWELL
MINNEAPOLIS-HONEYWELL REGULATOR COMPANY
2807 FOURTH AVENUE SOUTH, MINNEAPOLIS, MINNESOTA
CANADIAN PLANT, TORONTO. EUROPEAN PLANT, LONDON. COMPANY OWNED BRANCHES IN 49 OTHER CITIES

MINNEAPOLIS-HONEYWELL REFRIGERATION Control

MINNEAPOLIS-HONEYWELL

Winning Water Heater Displays Show Ingenuity In Design and Neat, Modern Treatment



Refrigerator Can Be Displayed Effectively All Year, Says Expert

(Concluded from Page 8, Column 5) in the local high school. She will be glad to supply the names of outstanding students who will welcome an opportunity to put their talents to a constructive use. During my years with the Powers Furniture Co. I have given a start to several artists who are now well-known.

"I find a stock of artificial flowers very useful; through the years I have built up my supply of flowers so that now I have varieties suitable for any season of the year.

"Blocks which are easy to handle and which form attractive floor finishes for display windows may be cut from heavy insulating board. After beveling the edges, paint the brick-sized blocks in eight or 10 different warm colors — yellow, orange, cream, brick-red, Spanish red. You will find innumerable uses for such blocks in your displays.

"All the properties used in your windows should be carefully packed away, for they may be used again and again. By adding occasionally to this supply you will build up a sizable stock of display materials.

HOW CAN REFRIGERATORS BE ATTRACTIVELY DISPLAYED IN THE 'OFF' SEASON?

"Refrigerators can be effectively displayed the year around. A window we once used in the coldest part of the year had a painted snow-covered landscape in the background, a refrigerator, a cut-out snowman, and piles of cotton snow in the foreground. The placard read, 'It's always summertime in your kitchen. A refrigerator is a year-around necessity.'

"That window would have been equally effective in the hottest summer months.

HOW OFTEN SHOULD WINDOWS BE CHANGED?

"It seems to me that it is a mistake to change a window too often. New persons are seeing the display each day, and a week isn't too long to keep a window. If a window is especially effective, don't take it out to make room for another display; keep it in; let every good window do its maximum in merchandising for you."

Appliance Store Sales Gain In Gov't Survey

WASHINGTON, D. C.—Household appliance stores continued to show sales gains considerably over the national average for all stores during May, according to a summary prepared by the bureau of the census, based on reports from 23,352 firms in 34 states.

Appliance stores reported gains of 14.4% over the same period of 1939, as against 6.5% for all stores reporting in the survey. For the first five months of the year, sales by appliance stores were 13.4% higher than in 1939, for stores reporting.

Kitchen Bureau Names Display Contest Winners

NEW YORK CITY—Donald Duck piloted Ohio Edison Co., Akron, to the first place award of \$100 in Modern Kitchen Bureau's nationwide contest for the best window display of electric water heaters this spring. Idaho Power Co., Boise, was awarded second prize of \$50.

J. W. Hoogerhyde, manager of Ohio Edison's display department, received the \$100 prize, and J. K. Newport of Idaho Power's display department carried off the \$50 second prize.

First-prize window pictured Donald Duck sailing the seas with an electric water heater, and chanting a verse about the convenience, safety, and dependability of electric water heating. The Boise window showed a shivering householder waiting for an old-fashioned water tank to heat, and captioned: "Don't be a tank-patter."

Ten third prizes of \$10 each were awarded. These went to: Buffalo, Niagara Electric Corp., Niagara Falls, N. Y., F. S. Wahl, Jr.; Electric Power Board of Chattanooga, Tenn., C. B. Osborne; Gulf States Utilities Co., Beaumont, Tex., Brice L. Pettie; Kansas Gas & Electric Co., Wichita, Kan., Nat Wylie; Minnesota Power & Light Co., Duluth, Minn., R. E. Anderson; Northwestern Electric Co., Portland, Ore., J. W. Bremmer; Philadelphia Electric Co., Philadelphia, W. Gilbert Brown; Tennessee Eastern Electric Co., Johnson City, Tenn., George T. Speed; Wisconsin Michigan Power Co., Appleton, Wis., N. A. Zanzig.

Store Lists Benefits Of Fewer Models

LOS ANGELES—Fewer refrigerator brands has meant more refrigerator sales for Eastern-Columbia department store here. This store has found that handling two lines instead of five simplifies the sales approach and makes it more effective.

Sales approach under the two-line system begins by asking the prospect if she has any preference for either make. If she does, then the sales story is concentrated on that make. If she does not, the salesman starts to make a point-by-point comparison of the two lines until he begins to notice a more decided response toward one or the other.

Previously, when the store was handling five lines, it was found that a great many shoppers were inclined to take advantage of this wider display simply to make comparisons.

Sensing this, the salesmen, almost unconsciously, had reached the point where their talk on the first unit with "light" and lacked punch, the second model would get a stronger push, and so on progressively through the line, with the fifth model really getting "the works." This policy, the store found, tended to confuse the customer so much that many walked out and bought elsewhere.

The store's physical set-up makes it more practical to use "general" rather than one-line salesmen.

(Left) J. W. Hoogerhyde, display manager of Ohio Edison Co. at Akron, Ohio, arranged this effective window display to promote electric water heating, and won first award and cash prize of \$100 in national contest conducted by the Modern Kitchen Bureau. Colors are blue, orange, and white.

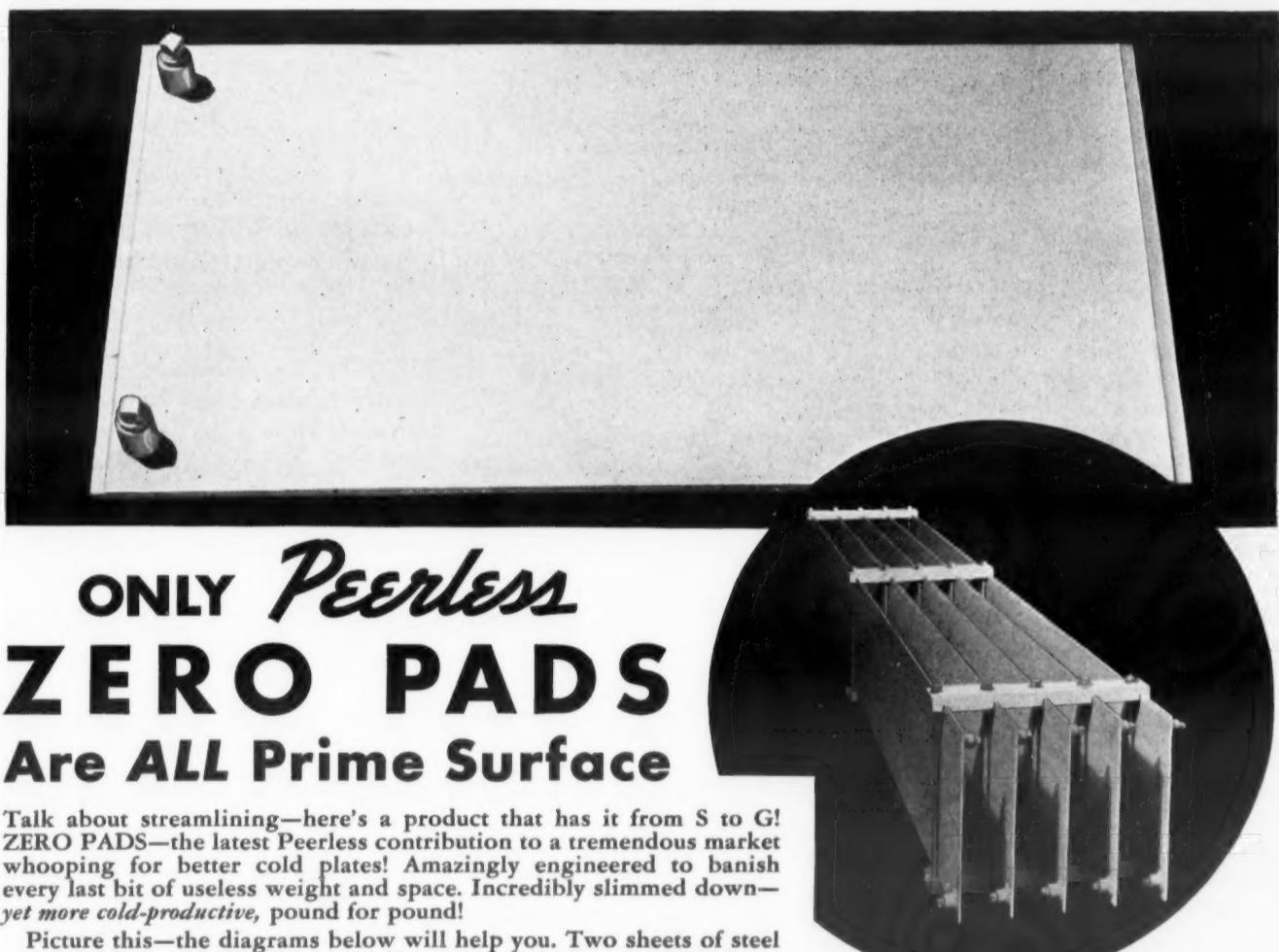
(Right) This animated figure of a shivering householder waiting for the

old tank to get hot was the center of attention in this second prize window. Design was by J. K. Newport of the display department of Idaho Power Co. at Boise, Idaho, who received the second cash prize of \$50. Large circle was dark green; inside panel, light green; base and outer curve, primrose yellow with black lettering. The man's arm moved in life-like manner

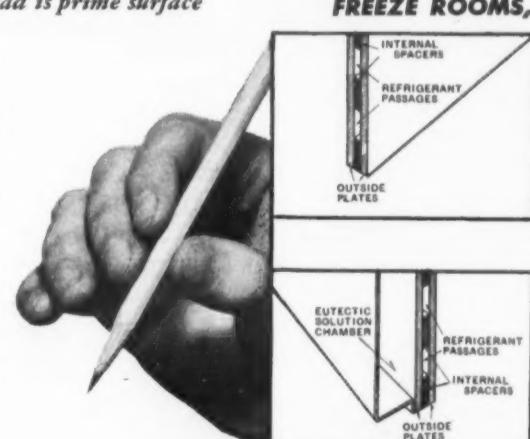
Electrical Wholesalers Convention Date Set

PITTSBURGH—Semi-annual convention of the National Electrical Wholesalers' Association will be held at the Hotel William Penn here Oct. 22 to 25.

THIS NEW IDEA CHANGED COLD PLATE STANDARDS!



Today's best bet for LOCKER PLANTS . . . TRUCKS . . . SHARP FREEZE ROOMS, etc.



This cross-section shows how formation of refrigerant passages permits extreme plate thinness.

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P. O. Box 636
Detroit, Mich.

AIR CONDITIONING & REFRIGERATION NEWS

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F. M. COCKRELL, Founder

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Wanted: Some New Words

W. D. KEEFE, refrigeration sales manager for Federers, believes that the word "jobbers" has something to do with the occasional strained relations that arise between manufacturers and those who sell parts. The word "jobber," he believes, implies one who purchases distress merchandise, job lots, and whatnot.

It is his suggestion that refrigeration "jobbers" change their name to "wholesalers." Then, believes Mr. Keefe, the reaction on the part of manufacturers of household refrigerators would be more favorable, as it would more clearly designate the real function of such enterprises in the refrigeration industry.

Others to whom this suggestion has been relayed seem to agree that it has much merit. They feel that manufacturers, distributors, and dealers would not resent the word "wholesalers" like they seem to resent the word "jobbers."

And in an adjoining column, Harry Alter goes even farther. He thinks that new words are not only needed for "jobber," but for "service man" and even for "refrigeration."

(Editors of the NEWS, who each week smash their brains over the nearly impossible task of squeezing the long word "refrigeration" into a headline, would certainly welcome a substitute for that one!)

Writes Mr. Alter:

"Our company is engaged in the business of supplying so many different things that could not possibly be called refrigeration parts, that such an appellation does not fit us, nor any of the other firms likewise engaged. . . .

"Certainly our industry can look forward to many, many years of prosperity and activity. Certainly it is a highly specialized one, and in view of the fact that so many of us will be engaged in this endeavor for the rest of our lives, it is still not too late to try to establish a vocabulary in the industry that will more truly describe the art, as well as the

various functions of the people who go to make up the industry."

Undoubtedly both Mr. Alter and Mr. Keefe are on the track of something important. The science of "semantics" (use of words to influence action) is just now beginning to get the recognition and study it has long deserved. Politicians, demagogues, and dictators have cynically understood the importance of both "good" and "bad" words in directing the emotions of the people they rule.

Advertising men have, in a haphazard, unscientific fashion, made occasional strikes on the mother lode of semantics. But business in general has been quite ignorant, oblivious, or even contemptuous of the possibilities which lie in the study of words and the effect they can have on human being and human behavior.

We are not suggesting that Mr. Stuart Chase, Mr. Walter Lippmann, Mr. Floyd Allport, or Mr. William Casey (leading scholars in the science of semantics) be brought into the industry for consultation, or that any quack soothsayers be called in to work any hocus-pocus.

But we do say that the refrigeration and air conditioning industry could use some new words—some simple, direct, pleasant, catchy words—and some titles which are more accurate than some now in use. Discovery and adoption of such new vocabulary, we firmly believe, is much more important to the future of the industry than might appear at first glance.

The Chair will now recognize those who wish to offer nominations.

Opportunity In August

WITH an eye toward stimulating new fall business, the building industry is laying plans for an "all-out" drive this summer to promote property modernization and repair, with emphasis on "pay by the month."

This nation-wide campaign is planned to break simultaneously in all sections of the country in mid-August. The new drive, patterned closely after last summer's similar and highly successful campaign, will again stress "Fix Up Your Home! Modernize," and convenient monthly payments on the FHA plan of instalment buying will be featured.

Dealers who tied in aggressively to last year's drive found that many modernization jobs can be closed and new prospects developed by featuring FHA-insured (Title I) loans. Plainly, someone is doing a considerable volume of business under this plan, since Federal Housing Administration figures prove that about 3,000,000 of these modernization loans have been made to date.

That means something like \$1,100,000,000 worth of property improvement already financed on the FHA plan. An impressive total, even in an age of astronomical figures!

Has all the property improvement already been done? FHA officials think it's only begun, since applications for loans seem to be steadily rising and at present average about 10,000 a week.

As a matter of fact, FHA offi-

They'll Do It Every Time . . . By Jimmy Hatlo



cials throughout the country point out that industry is approaching that agency more and more frequently with cooperative suggestions and plans to make the most of the FHA modernization and repair program.

In line with these suggestions, FHA is again preparing literature and display material for the use of dealers. This will be available at headquarters in Washington, or through FHA's 64 field offices, about the middle of August.

The material includes a window display printed in dark red, blue, and yellow, and a cleverly illustrated booklet with a check list for home owners, printed in red and black. A mimeographed piece will describe how dealers can develop and handle business under the "Property Improvement Credit Plan," Title I of the National Housing Act. It is a brief merchandising manual for dealers, suggesting means by which they may increase their sales through the FHA plan of instalment payments.

Both the display material and literature are available to all dealers wishing to be identified with the national modernization program, but it will be sent only on direct request. It is suggested that this be done as soon as possible since quantities are limited and it is a case of "first come first served," in filling requests.

The window display pieces are designed to be used separately and may be adapted to the needs and display facilities of individual dealers. However, this material is essentially a unified window display in which all pieces are employed to feature the dealer's merchandise.

Other media besides store display, direct mail, and newspapers will be used during the forthcoming campaign. A car card will be released for national distribution in trains, cars, and buses.

Special radio programs are being arranged locally by state and district offices of FHA. In addition, manufacturers, dealers, and others will be provided, upon request, with scripts and commercial announcements by which their products may be tied in to the national program for Home and Business Property Modernization. A special transcription of drama-

tized radio "spots," suitable for dealer tie-in, will be made available through local radio stations.

Of course, the lending institutions themselves will play an important part in the national modernization program. The Federal Housing Administration is supplying them with special posters reading "We Make Loans to Modernize" which will be on display in their windows and on counters.

There are some 10,000 of these lending agencies which now hold contracts of insurance with the Federal Housing Administration to make Property Improvement and Modernization Loans.

Any of these institutions will cooperate with dealers who refer them modernization prospects. They will also be able to supply FHA literature and printed forms as well as information about the FHA plan. Lists of the qualified financial institutions in any locality may be obtained through the FHA field offices or by writing direct to the Federal Housing Administration at Washington.

It is to the interest of every home appliance and air conditioning dealer to be thoroughly familiar with the workings of the FHA plan of Property Improvement Loans. Briefly the plan is this:

The applicant for the loan must have an adequate income and own the property or hold a lease that runs at least six months longer than the term of the loan. The charge for these loans cannot exceed a discount of \$5.00 per \$100 face value of a one-year monthly payment note. The feature that appeals most strongly to the modernization prospect is the fact that the loan is repaid in equal monthly instalments suited to his income.

FHA's average insured loan amounts to about \$400. It seems plain that the dealers who have profited most in the past by these \$400 installations have stressed the fact that it only costs the prospect \$12.78 a month.

Electric refrigerators, all-electric kitchens, and air conditioning systems can all be sold on this plan. Last year thousands of such installations were made. This season, with business indices pointing upward, the prospects for

home modernization seem even better.

Dealers can profit in two ways: more sales can be closed, and the dealer receives cash payment. It isn't an untried plan. It has worked successfully before and it will work again for those who get busy and tie in to the national modernization program this August.

Few of the government's spendid programs seem to have such merit—from the long range viewpoint—as this one. By means of its operation, thousands of home owners become happier and more contented citizens; they acquire a bigger stake in the continuance of the capitalistic system; and hence they become stronger defenders of the American Way of free enterprise and individual liberty.

LETTERS

Harry Alter Starts Something

The Harry Alter Co. 1728 S. Michigan Ave. Chicago, Ill.

Editor:

Why don't you try to clarify and simplify some of the terminology in the industry, apropos of the letter printed in your issue of July 10 from Superior Valve & Fittings Co.

Reference is constantly being made to "parts jobbers," which appellation always leaves me slightly bilious. Our company is engaged in the business of supplying so many different things that could not possibly be called refrigeration parts, that such an appellation does not fit us, nor any of the other firms likewise engaged. Certainly a name more fitting could be devised by some of our bright minds than "parts jobber." Another ill-fitting name generally used is "service man," which to my way of thinking poorly describes the particular activity that we all know it to be.

I suppose that one of our difficulties in nomenclature to start with is the unwieldy word "refrigeration," and maybe something could be done about developing a substitute for that lengthy and poorly descriptive name.

Certainly our industry can look forward to many, many years of prosperity and activity. Certainly it is a highly specialized one, and in view of the fact that so many of us will be engaged in this endeavor for the rest of our lives, it is still not too late to try to establish a vocabulary in the industry that will more truly describe the art, as well as the various functions of the people who go to make up the industry.

As a leader and as a progressive periodical, why shouldn't the NEWS start something in this direction?

HARRY ALTER, President

LEADERS OF THE PUBLISHING WORLD PAY TRIBUTE TO MEMORY OF F. M. COCKRELL

Malcolm Muir

Newsweek
R. K. O. Building—Rockefeller Center
New York, N. Y.

Dear Mr. Taubeneck:

After writing my letter of May 29, I heard of Frank Cockrell's death.

I was terribly shocked for although I had not seen him for quite some time, I valued highly the memory of our close association. I had always admired his publishing ability.

I would like to extend to his family as well as his organization my very deep sympathy.

MALCOLM MUIR

Roy Dickinson

The Printers' Ink Publications
185 Madison Ave.
New York, N. Y.

Dear George:

As I told you down in Washington, I meant to write you immediately upon hearing of my friend Mr. Cockrell's death. I told you at Washington and I repeat to you now that I always had the very highest regard for Mr. Cockrell and I know that his loss will be keenly felt by all of us.

I know, however, how close you were to him, how much he thought of you, and I know that your elevation to head up the company leaves the organization in capable and aggressive hands.

I wish you well in your new work and if at any time I can be of the slightest possible assistance to you, I hope you will call on me. With very best wishes.

ROY DICKINSON,
President

James H. McGraw, Jr.

McGraw-Hill Publishing Co., Inc.
McGraw-Hill Building
330 West 42nd St.
New York, N. Y.

Dear Mr. Taubeneck:

I heard only recently of the death of my good friend, Frank Cockrell. This news came to me as a real shock because the last time I saw Frank he appeared to be in his usual good health.

As one of his old friends and associates, I had a real respect for his publishing ability and greatly valued the close relationship I always enjoyed with him.

I want you to know that his passing leaves me with a deep sense of personal loss and I extend to you and his other associates my heartfelt sympathy.

JAMES H. McGRAW, JR.

Arthur Hirose

McCall Corp.
230 Park Ave.
New York, N. Y.

Dear George:

I've been away from the office almost all of the past 30 days and so today learn with a distinct shock of Frank Cockrell's death.

Years ago—it must be fully 20—we first met when we were both working on McGraw-Hill's electrical and radio publications. Although in those days Frank was concerned largely with sales promotion and research, he had the vision that is so necessary to a publisher.

Then came electric refrigeration and gas refrigeration and Frank had the vision to realize that the then infant industry would need a magazine of its own. The growth of refrigeration and its younger sister, air conditioning, amply justified Frank's vision and courage, because it certainly took courage in those early days to start ELECTRIC REFRIGERATION NEWS.

Fortunately, when I resigned from McGraw-Hill to head up market research for McCall's Magazine and Redbook Magazine, a sustained interest in refrigeration went along

with me and blossomed forth in our McCall-Redbook studies of household refrigeration and allied fields. These studies you and Frank were both nice enough to think well of and to print in your own columns.

Looking back on refrigeration's early years, Frank Cockrell certainly deserves a place in refrigeration's own "Hall of Fame" for the contributions he and his magazine have made to what is now one of the ranking industries of the nation—an industry that has made a definite contribution to the lot of the American consumer.

Please tell Mrs. Cockrell and Frank's family how much all of his fellow workers will miss him.

ARTHUR HIROSE

E. B. Terhune

Chilton Co., Inc.
239 West Thirty-Ninth St.
New York, N. Y.

Dear Mr. Redeker:

On my return this morning from a rather protracted business trip throughout the West I find in my accumulated mail copy of your publication dated May 29, announcing the death of Mr. Cockrell.

This comes to me as very much of a shock because F. M. and I spent quite some time together at the Hot Springs A. B. P. meeting early in May and at that time he seemed to be in splendid condition.

I have always looked upon Mr. Cockrell as a splendid gentleman and an able publisher, and feel that his passing will prove a definite loss to the A. B. P., the publishing fraternity, and, of course, to his own intimate associates.

I would appreciate it if you would extend my deepest sympathy to the members of your organization, as well as to the members of Mr. Cockrell's family.

E. B. TERHUNE,
Vice President

O. J. Willoughby

Refrigeration
Atlanta, Ga.

Dear George:

I always find it impossible to wisely extend sympathy in cases of bereavement. I just seem to fumble the words, but I definitely shall miss Mr. Cockrell, and sincerely regret his passing.

I know, however, that your broad shoulders are capable of carrying on, and I shall take pride in the success that I am sure is to be yours.

O. J. WILLOUGHBY,
Publisher

Walter J. Daily

Roy S. Durstine, Inc.
580 Fifth Ave.
New York, N. Y.

Dear George:

Frank's death is hard to realize, somehow. He was a real constructive influence on a hard-hitting industry, and made many worthwhile contributions, never hesitating to criticize when he felt it would do some good. He will be sorely missed.

The mast head in the current edition carries your name as publisher. Your long association with Frank and your comprehensive knowledge of the electrical industry should ideally equip you for this work.

Best regards.

WALTER J. DAILY

Stanley A. Dennis

7600 S. Essex Ave.
Chicago, Ill.

Dear George:

By merest chance a day or so ago, I heard someone mention the death of F. M. Cockrell. I then managed to locate some back issues of your paper, and read the news stories of his passing.

To say that I was shocked ex-

presses it mildly. I have long thought of Frank (he was always just "Frank" to me) as one of the younger publishers with many years of splendid work ahead of him. Frank and I were closely associated back in our McGraw-Hill days and memory brings up again many profitable hours that we spent together then.

I recall his early dreams of a publishing business of his own, and how his enthusiasm waxed keen when he began to focus his effort on the refrigeration industry. I think of him as a man who found his work—an excellent work—and who let nothing and no one turn him from it. How well he did it, the industry knows, and will always be indebted to him for it. It is not given to every man to leave a record of outstanding leadership in two industries. It was, to Frank the refrigeration and the publishing industries.

My sympathy goes out to you in your own loss, as it does also to Mrs. Cockrell and her daughter.

In taking up the work which Frank has laid down you have my full confidence and deepest good wishes. You'll just keep on making good, George, as you have for years. Continued success to you and all who are associated with you on AIR CONDITIONING & REFRIGERATION NEWS.

STANLEY A. DENNIS

G. Cheadle

Evans-Winter-Hebb, Inc.
420 Lexington Ave.
New York, N. Y.

Dear George:

Congratulations on your new position as publisher of AIR CONDITIONING & REFRIGERATION NEWS.

I am sure that your success is assured without my good wishes, but believe me you have them just the same.

I had read of Mr. Cockrell's death

several weeks ago and wondered if the change which was reported in June 17 Advertising Age would not take place.

You probably know that Mr. Hebb, who was president of Evans-Winter-Hebb, had died suddenly only a week or so before Mr. Cockrell. May seems to have been a bad month for Evans-Winter-Hebb men.

Any time when business brings you to New York and leaves a few minutes to spare on your hands, please be sure to look me up.

G. CHEADLE

J. W. Beckman

The Crosley Radio Corp.
Cincinnati, Ohio

Dear George:

We here did not learn of the death of Frank M. Cockrell until last week. I wired Phil our sympathy to the family and the staff of the News.

Frank's passing keeps going through my mind. It is hard to realize it. He was so dynamic. I remember when ELECTRIC REFRIGERATION NEWS was started. It took a lot of courage to undertake it, and I know in many circles there were misgivings. But Frank had foresight, along with aggressiveness and ability, and ELECTRIC REFRIGERATION NEWS progressed and prospered.

My work in the electric refrigeration industry goes back almost to the beginning of ELECTRIC REFRIGERATION NEWS. I was in very close touch with those who pioneered it and who have continued on since. I am glad to have been able to cooperate with it and with the industry in the pioneer days for both. During the years I was in Detroit handling publicity for the industry, I was in such close touch with the News that I almost felt I was part of the staff. I was practically treated as such. For all these

reasons, I felt keenly the passing of Frank in the prime of life, when he could enjoy the fruits of his labors, and when there still is much he could have done.

Again, with my kindest wishes to all members of the family and the News staff.

JAMES W. BECKMAN

B. C. Reber

Box 1097
San Antonio, Tex.

Dear Mr. Taubeneck:

It was indeed a great shock to receive your letter this morning and learn of the untimely death of Mr. Cockrell.

In the early days when ELECTRIC REFRIGERATION NEWS was started, I was more active in business writing, and it was my good fortune to furnish Mr. Cockrell quite a little copy. He was always fair in his consideration of my efforts, and liberal in payments.

The refrigeration and air conditioning industries have indeed suffered an irreparable loss. Mr. Cockrell was a pioneer who, through the pages of ELECTRIC REFRIGERATION NEWS, spread the news of an infant industry, and later the air conditioning industry, to the front. His courage in printing the news, regardless, commanded the respect and admiration of those who knew him. I should appreciate it if you would inform his family that one of the men in the field expresses his deepest sympathy at their loss.

I note that you are going to carry on, and I want to take this opportunity of assuring you of my cooperation at all times, and whenever I can be of service to you, you have but to command me.

Again expressing my deepest sympathy, I am,

B. C. REBER



You get the help of Du Pont Research and Technical Assistance with Preferred METHYL CHLORIDE plus Coast-to-Coast Prompt Distribution

E. I. du PONT de Nemours & Company (Inc.)
The R. & H. Chemicals Department
Wilmington, Delaware

District Sales Offices: Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, Pittsburgh, San Francisco



Sectional Cooling Equipment Replaces Ceiling Coil System In Brewery

Installation of New Units Makes Possible More Exact Control of Air Conditioners In Stock Cellar

COLUMBUS, Ohio—A unique sectional cooler installation has been completed in the stock cellar of the Washington Brewery here, the expansion of production facilities making necessary the replacement of the ceiling coil system by modern cooling equipment capable of maintaining temperature at 33° F. in the huge room.

In order to handle this increased refrigerating load without using greater floor space the firm selected a York industrial wetted surface air conditioner of the sectional type, model I-WV-126A. This selection enabled the brewery not only to meet the greater load imposed, but also to provide a liberal reserve margin high enough that the equipment can operate approximately three fourths of the year without resorting to the circulation of brine over the coils.

The machine and controls are mounted on a wood platform located 9 feet 10 inches above the floor and on a level with the catwalk which provides access to the upper row of storage vats. The platform is mounted on a structural steel framework which provides an additional solution to the major problem of conserving space to allow for maximum product storage in the remodeled cellar.

The stock cellar itself is a room 56 feet 3 inches long, 47 feet 2 inches wide, and 21½ feet high, housing 18 Pfaudler horizontal beer storage vats. The conditioning equipment for this area occupies a space 126 inches long, 42 inches wide, and 88 inches high with the surge drum adding 18 inches to the length.

Besides the usual heat losses there is a daily beer cooling load of 200 barrels which must be reduced from 38° to 33° F. Allowance was also

made for 900 watts of light and for one workman constantly in the room. This brought the aggregate refrigerating load to 7.3 tons during each 24 hours. Room walls were insulated with 3 inches of corkboard.

The conditioner itself is a direct expansion ammonia unit with both dry and wetted cycles. It is designed

for industrial applications requiring definite control of temperature, humidity, and air motion. The sectional construction feature allows close adaptability to a particular cooling job. Each unit consists of a fan deck, coil section, and deep pan base with low head circulating pump and spray headers.

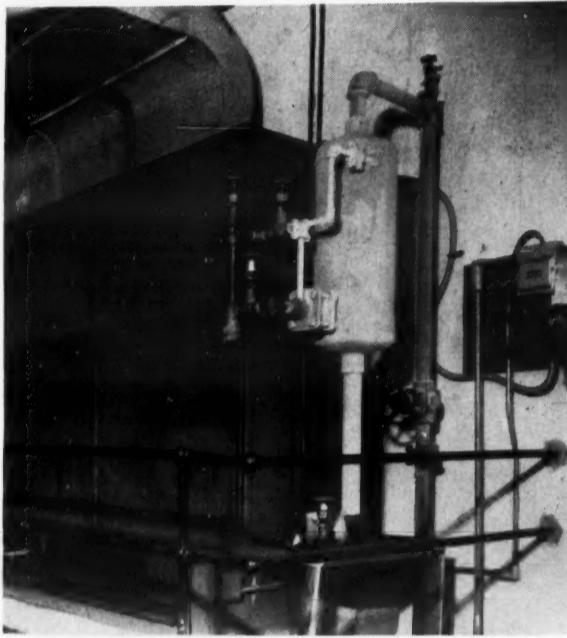
Coils consist of 2,405 linear feet of ¾ inch full weight steel galvanized pipe, welded to distributor headers, annealed after bending to relieve internal strains, and tested to 300 lbs. pressure. An ammonia charge of 310 lbs. is required.

Short brass spray tubes and headers are arranged within the casing to distribute the brine over the entire coil surface. The low head brine circulator is powered by a ½-hp. Scott Co. of Columbus.

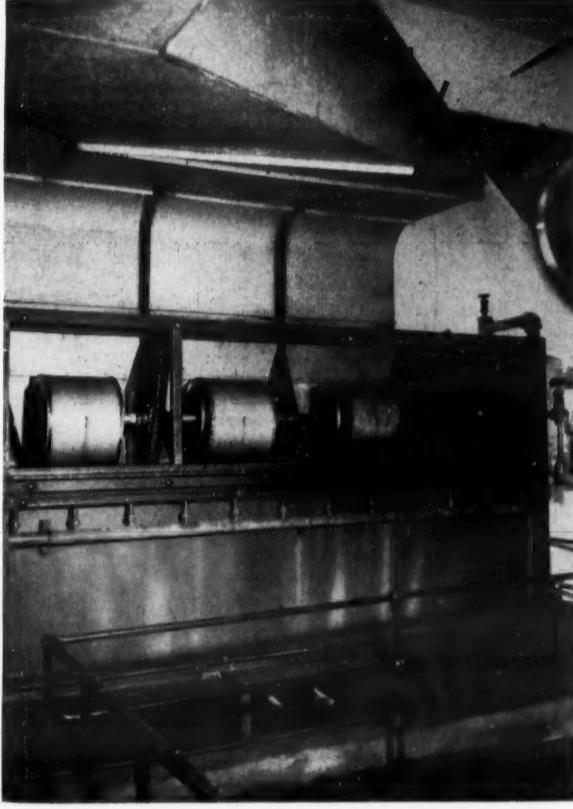
Ductwork is of large proportions to handle the high volume of flow. It is constructed from Armco steel to insure long life in the room which has unusually high moisture ratio. The ductwork was done by H. Clyde Scott Co. of Columbus.

The installation was engineered and supervised by F. J. Zoppel, president of the Columbus Refrigeration Co.

Here's the Equipment That Does the Job



This York industrial wetted surface air conditioner, which cools the stock room of the Washington Brewery, is mounted nearly 10 feet above the floor. Plainly in evidence are the refrigerant controls and the liquid ammonia surge drum.

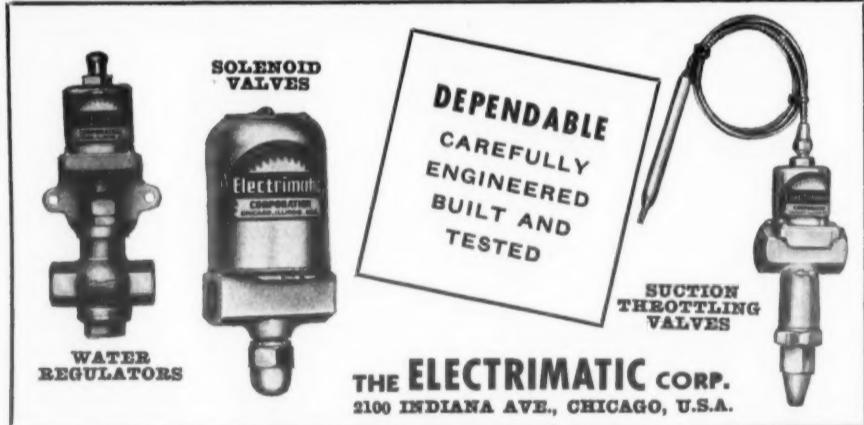


Sectional construction features of the conditioner unit are shown in this closeup view. Fan row and duct outlets are clearly visible. Behind the center plate is the 2,405-ft. coil battery. The lower portion or air intake houses brine reservoir, circulator, suction screen, and strengthening basket.

Pleasantaire

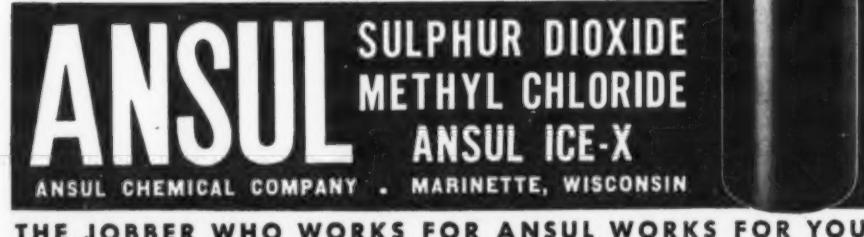
FINEST NAME IN AIR CONDITIONING
MOST VALUABLE FRANCHISE
in the WINDOW-TYPE FIELD

Pleasantaire Corporation, Tower Bldg., Washington, D. C.



When you do business with an Ansul Jobber you do business with a man who wants to serve you as a friend. He prizes your satisfaction and your good will too highly to regard you only as an account number. That's why he's an Ansul Jobber.

Agents for Kinetic's "Freon-12" CA-9-9



motor. Resistance to airflow is decreased and heat transfer efficiency of the unit is increased by the spray feature which prevents frost accumulation on the coil battery.

The installation has a reserve margin sufficient to allow full operation on the dry cycle except, of course, during the peak summer season when it is necessary to employ the brine circulator in order to meet maximum load conditions imposed.

The bottom or air inlet section contains the reservoir for brine equipped with low-head circulator and suction screen. A brine strengthening basket is provided.

PRESSURE REGULATOR

In order to maintain the evaporating temperature in the unit at 16.6° F. (30 lbs. suction pressure) it was necessary to install a York automatic suction pressure regulator with manual bypass. This control was required because the general plant suction pressure will, at times, drop to a low of 15 lbs. gauge.

Basing the system on this required pressure, a larger unit was essential with larger ductwork and with all accessories correctly proportioned.

The refrigerant control is a standard York low pressure float regulator with manual bypass provisions and liquid ammonia surge drum, all heavily galvanized.

One feature of the installation engineering is the glass wool eliminator, located between the coils and the fans, which serves to prevent brine from being carried into the air discharge system and subsequently throughout the operating area.

To secure the required 8,550 c.f.m. air circulation necessary to keep the room at 33° F., the top section is furnished with three multi-blade centrifugal fans of stainless steel. The fan chamber is more than 20 inches deep and each discharge vent is slightly more than 30 inches in width.

A 3-hp. 220/3/60 fan motor and drive are located in a separate ventilated compartment on the fan level. The motor has a magnetic starter with push-button control. The fan shaft is suspended in full

floating sleeve bearings with reservoir type lubrication. The V-belt drive has variable pitch motor pulley for easy fan speed adjustment.

Throttling dampers are located at the end of each duct outlet. These outlets are fed by separate ducts connecting with the main duct line which carries the circulation to all parts of the room.

Ductwork is of large proportions to handle the high volume of flow. It is constructed from Armco steel to insure long life in the room which has unusually high moisture ratio. The ductwork was done by H. Clyde Scott Co. of Columbus.

The installation was engineered and supervised by F. J. Zoppel, president of the Columbus Refrigeration Co.

St. Louis Serviceman Says

'The Second Call Counts'

ST. LOUIS—It isn't the first refrigeration service call which is important to continued success of the firm, but the second, according to manager Lloyd Goodenough of the North Side Refrigeration Service Co., authorized Frigidaire service firm here for the past five years.

The first call is open to any service organization, he points out, but the second reflects confidence in the firm which can be capitalized upon at once.

For several years, North Side Refrigeration Service has been pulling a valuable number of regular customers through a simple idea of following up second calls, rather than the first.

If the woman makes a second call, it is ample evidence that she is convinced of the reliability of the firm, and for this reason is a constant asset toward getting business from her friends and neighbors, Mr. Goodenough believes.

Each service call taken in at the switchboard in the North Side Refrigeration Service office, from which all jobs are routed, is immediately checked with service records in order to find out whether the woman calling has used North Side service before.

If she has, the serviceman has instructions to memorize the name, what was originally wrong with the box, and the approximate conditions under which the first call was made. Then, in the home, the service man can use this information as the basis for friendly remarks which show that the firm has not forgotten her previous patronage.

One week following the second service call, a penny postcard bearing the handwritten thanks of the firm is sent to the customer, pointing out that she has used North Side Refrigeration service twice. A promise of quick, satisfactory service in any event is always included, plus a personal note inviting her to ask for whatever man called on her home before.

New Hampshire Firm Moves

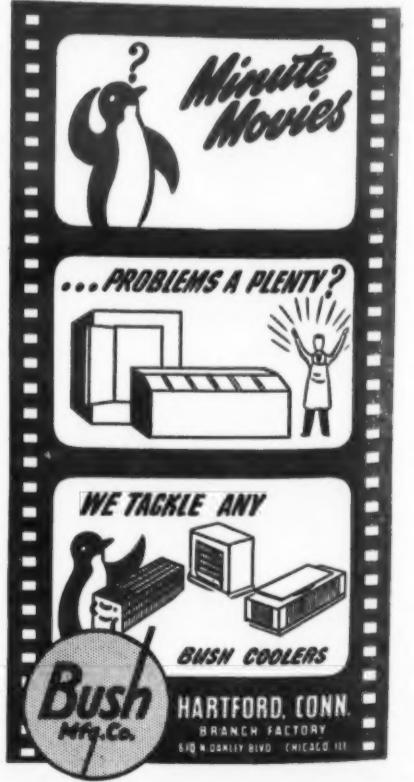
ROCHESTER, N. H.—The Radio Service Laboratory, electrical appliance firm, has been moved from Main St. to the Old Dover road. Wesley Martin is proprietor.

Anaconda Copper Refrigeration Tubes

Unusually soft!



THE AMERICAN BRASS CO.
FRENCH SMALL TUBE BRANCH
General Offices: Waterbury, Conn.



How To Service Self-Contained Store Units Told in 'Case History' of Job in Field

Service Man Should Not Add Oil or Gas Until Air Volume Over Coils Is Adjusted

By Henry Knowlton

Early in the days of the automobile the mechanic learned that he must have spark from the battery, gasoline from the tank, and compression in the cylinders to make an automobile engine run.

Today the service engineer handling store cooling units is learning that he must have enough refrigerant, oil, water, and air over the coils, as the basic essentials, before he begins the more complicated adjustment of valves and controls.

In one recent instance, two 5-hp. store cooling units were sold to the owner of a popular mid-town restaurant in a large city. Because the owner believed that it would be cheaper to handle his own installation work, the dealer delivered the units and placed them in their proper positions at one side of the large dining room.

Water connections and power wiring for the two units were done by mechanics employed by the owner. When this work was completed the dealer sent a service man to check over the units and place them in operation. He reported that the equipment operated in a satisfactory manner and that "everything was in good shape."

Not many days later the owner called and told the dealer that on the previous evening, when his place of business was crowded, the units would not run. Complaint—"No cooling."

That afternoon a service engineer was sent to diagnose the trouble and put the conditioners in service.

Conditioner Starts And Then Stops

When the main switch controlling the first unit was turned on the compressor started immediately, continued to run for a few moments, and finally stopped. Obviously the unit was getting power, therefore the fuses did not need to be checked.

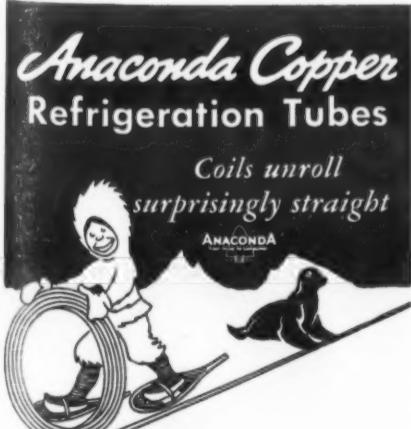
Self-contained store cooling units are equipped with controls which prevent the operation of the system in case it is not getting the proper amount of condensing water. Unless the heat absorbed by the refrigerant is carried away immediately it would damage the compressor, and for this reason the protecting mechanism is standard equipment.

The service engineer checked the water line in the basement of the building to see that all valves were open. He found that some water was coming through, as all valves were open and the line felt cold to the touch.

When the conditioner was started again it repeated the former performance—operating for a few seconds and then shutting down. The unit seemed to be getting water, but apparently was not getting enough water to keep it in operation.

While examining the basement water line the service engineer observed that it had been made out of second-hand galvanized pipe. He reasoned that rust and scale from the interior of this old pipe might have filled up the strainer on the water valve.

This water valve (Electromatic) is



held open by pressure from the refrigeration cycle and remains open as long as the machine is running. It is protected by a small strainer.

Removal of the valve and strainer revealed that the strainer was clogged with small particles of rust, dirt, and impurities from the inside of the ancient water pipe. Because of this condition the strainer had permitted water to trickle through to the valve, but did not permit passage of enough water to keep the conditioner running.

After the strainer was cleaned and the valve seat checked, the assembly was replaced. The conditioner responded immediately when the main switch was thrown and continued to run.

During this initial operation refrigerant and oil were visible in the sight glass at the base of the compressor. Under normal conditions the oil level in the crankcase holds a position about half way up this glass.

Watch Oil Line In Sight Glass

After the compressor operated for a brief period, neither oil nor refrigerant could be seen in this glass. This might indicate that the compressor was short of oil, short of refrigerant, or that the emulsion of oil and refrigerant was not returning to the compressor as rapidly as necessary to complete the refrigeration cycle.

Most compressors are equipped with some device for checking the refrigerant charge. In this case a small petcock was opened, permitting liquid "Freon" to escape. If gas, rather than liquid, had come out of this petcock, the engineer would then add refrigerant. In this instance, no additional "Freon" was required.

As the machine continued to operate the oil level in the sight glass failed to return to normal and the compressor made a "pinging" sound—indicating that liquid refrigerant was being returned in quantities from the cooling coils.

Approximately one quart of oil was added to the charge. The oil level came up slightly in the sight glass, but the "pinging" sound continued. From this the engineer concluded that the compressor was sending a charge of refrigerant and oil to the coils, but that the refrigerant was returning to the compressor in liquid form—slugging through—with much of the oil remaining in the upper part of the system.

Fan Speed Increased By Adjusting Pulley

By feeling the air flowing from the grille at the top of the conditioner, the engineer discerned that the unit was not putting out its rated air capacity. The top panel was removed and the fan speed increased by adjustment of the fan motor pulley.

Most unit conditioners are equipped with adjustable pulleys which may be tightened until the belt rides on a larger circumference of the pulley, thus changing the ratio between fan motor and fan. After this adjustment was made on the pulley, the motor mounting had to be moved slightly, to compensate for the change in the length of the pulley.

As soon as the coils were given an increased air supply, the oil began to return to the sight glass, indicating normal operation. The "pinging" stopped, and the owner, who observed the service work, seemed pleased with the decreased noise of the machine.

Dirt Cleaned Up; And Units Polished

Before leaving the job the engineer checked all controls on the conditioner, and determined that the built-in thermostat would operate as

required. All "mess" made when adding oil to the machine was carefully cleaned up. Front plates were replaced and fingerprints polished off.

An inspection of the second conditioner indicated that it would not run for the same reason—lack of water. The strainer was cleaned, but the fan speed had to be increased before the compressor would operate quietly and oil would return to its proper level in the sight glass.

Airo Supply Stages Anniversary Picnic

CHICAGO—Celebrating its fifth anniversary as a refrigeration supplies jobber, Airo Supply Co. is staging a picnic and "fun festival" to which all members of the refrigeration and air conditioning industry are invited. The party will be held on Sunday, July 21, at a lake near Chicago.

Refreshments, prizes, and entertainment will be provided free by Airo, and swimming, fishing, boating, dancing, horseback riding, and other recreations are available. A complete program of games and contests also has been planned, including a "championship" softball game between Chicago R.S.E.S. members and service men from outside Chicago.

The picnic will go on, rain or shine, facilities of a large resort hotel being available in case the weather is bad. Picnic grounds are located 60 miles from Chicago, 60 miles from Rockford, and 45 miles from Milwaukee.

Persons in the industry who wish to attend the picnic may obtain complete details by dropping a card to Airo Supply Co., 2732 N. Ashland Ave., Chicago, giving the number of people who will be in their party.

Crown Service Formed

LOS ANGELES—J. A. Wilson is proprietor of the newly formed Crown Refrigeration Service, with headquarters at 232 S. Los Angeles St.

Downtown Service Firm Contacts Customers 'Over the Counter'



Ben Kaufman (right) tells a prospective customer about his specialized appliance service.

SCRANTON, Pa.—Locating its shop in the downtown business district with appliance customers served "right over the counter," General Electric Appliance Service has a service operation patterned along the lines of a retail store with convenience to large department and appliance stores swelling its customer and prospect list.

Large amount of the "store traffic" comes through the firm's service on all kinds of small appliances. Location of the service store makes it convenient for downtown shoppers, and a delivery service aids in building the volume. About 30% of the firm's business is done in the servicing of small appliances, according to Ben Kaufman, manager of the firm. However, service contact on small appliances is a valuable wedge to further business in refrigerator service and electrical wiring, the firm's other major activities.

Service on household refrigerators is done on a contract basis for large downtown department stores not maintaining service departments. The location of the service store and shop makes it convenient to all the large stores in the business district. Contract work is done at a flat rate per unit.

Going out on calls for the department store, the firm represents itself as the regular service for the particular store, but a sticker inside the box advertises the service firm

for calls out of the warranty period. This also brings in service calls on other appliances as well as store traffic.

After gaining a service entrance through refrigerator service for the department store, service on all appliances is routed to the store, and again the location bulk large in getting this business.

To aid in paying the overhead on maintaining a downtown location, the firm sells light bulbs, and also carries a line of used vacuum cleaners, reconditioned in the shop in the rear of the store. Effort is made, however, to keep the firm a strictly service enterprise, Mr. Kaufman says, to avoid competition with the company's department store service accounts.

Engineering Firm Gets Oklahoma Charter

OKLAHOMA CITY, Okla.—A charter was issued July 1 by Oklahoma's Secretary of State to Air Conditioning Engineering Co., 731 N. Western Ave. here. Capital stock of the new firm was listed at \$25,000. Incorporators named were: C. M. Dickinson, Bemidji, Minn.; and F. H. Towe and W. K. Denison, both of Oklahoma City.



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Easily Installed and Adjusted

• These parts built to the same high standards of precision and quality as Frigidaire finished products. Easily installed in soda fountain or commercial applications to correct operating deficiencies. Maximum operating efficiency always. Write your Frigidaire distributor today for prices and full details.

1. Thermostatic Regulating Valve

Provides more positive control of temperatures by a thermostatic element placed in fixture or liquid being cooled. Recommended for multiplexed ice cream cabinets. Controls ice formation in water bath.

2. Snap Action Valve

Provides different temperatures on multiplexed installations with positive defrosting of finned evaporators.

3. Liquid Temperature Valve

Minimum low back pressure adjustment in direct expansion instantaneous beverage coolers.

4. Evaporator Regulating Valve

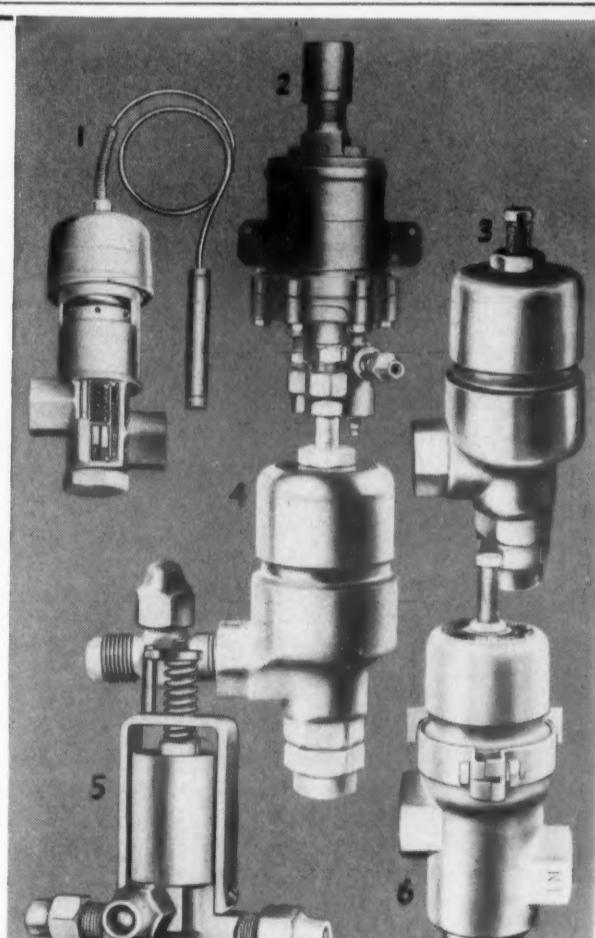
To prevent frosting of multiple forced air evaporators. Permits temperature difference in fixtures.

5. Automatic Regulating Valve

To control water bath temperatures used in soda fountain applications when multiplexing. Can also be used in commercial applications.

6. Crankcase Regulating Valve

Prevents high back pressure. During long off period, valve closes tightly to prevent excess pressure in crankcase; protects stuffing box seal and prevents absorption of refrigerant in crankcase oil.



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TO SATISFY YOUR EVERY REFRIGERATION SERVICE NEED

Oklahoma Laundry Owner Plans To Install 2,400 Lockers In 'World's Biggest' Plant

OKLAHOMA CITY, Okla.—What is believed to be the largest frozen foods and locker storage plant in the world will be completed here within the next few weeks by Nuway Frosted Foods Co.

Designed and built by Pat Denham, who also owns the adjoining Nuway Laundry, the plant will open with 2,400 lockers, and will have a total capacity of 5,000.

Locker rentals will vary from \$6 to \$10, depending upon their location, type, and size.

Estimated cost of the two-story-and-basement building is \$100,000.

The firm plans to carry stock valued at from \$20,000 to \$25,000.

A retail and wholesale market will be located on the first floor of the plant's modernistically designed building. In this market frozen meats, vegetables, fruits and fruit juices, and ice will be sold. The room will be kept at a temperature of 32 to 36° F. at all times, and will contain two cooler cases.

Also on the first floor will be a 15 x 30-foot chill room with four 20-foot rails for meat. Extra-heavy York doors will protect this room.

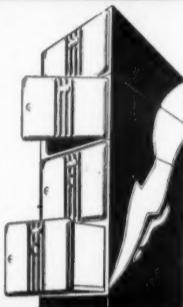
On the second floor will be a 66 x 108-foot cold storage room served by a "dumb waiter" arrangement and also by a larger elevator for conveying truckloads of foodstuffs. Adjoining this room will be a 60 x 60-foot curing room. The ice plant will have a capacity of 12 to 15 tons.

Both Frick and Koch cooling equipment are to be used in the plant. All coils in the building will be electrically welded. Three carloads of corkboard will be used in the building's construction, 8 inches being used in the walls of the sharp freezer and 6 inches elsewhere.

This new enterprise will make use of the 850-foot well and the electric power plant owned and operated by the adjacent laundry.

Consistent door-to-door distribution of handbills and frequent radio spot announcements are being used to promote the plant to the public. A 15-foot 2,000-pound Neon sign will be erected on the finished structure.

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Write today for full facts... and sell the finest food lockers.

McGREW MACHINE CO.
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INDIVIDUAL UNIT
FOOD LOCKERS

ACCURACY

You get it in WOLVERINE TUBING

—Buy From Your Jobber—

WOLVERINE TUBE CO. DETROIT

FOOLPROOF

WEATHERHEAD Silica Gel Dryers



WEATHERHEAD Silica Gel Dryers are engineered to do the job so as to provide a foolproof installation that permits a full flow of refrigerant at all times. Bodies of these dryers are made from seamless steel tubing with formed steel ends and stainless steel screens hydrogen welded into an integral assembly. All are pressure tight and tested to 200 pounds pressure—no gaskets—no soft solder—no danger of leakage.

Rechargeable and Non-Rechargeable Types

Rechargeable dryers can be readily refilled, while non-rechargeable dryers are designed for permanent installation on new equipment or on old after the system has been completely freed of moisture. Rechargeable dryers have universal connections, so that by using the proper reducing fittings the dryer can be used on any size of line.



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WEATHERHEAD
Refrigeration Valves and Fittings

LOCKER PLANTS

Completed . . .

FOUR IN ALABAMA

BIRMINGHAM, Ala.—Four quick-freezing and locker storage plants are listed under "New Industries" in the June report of the Alabama Chamber of Commerce. They are:

A 200-locker plant at Grove Hill. This \$25,000 concern is headed by James S. Pugh.

A \$15,000 plant at Cullman with a capacity of 300 lockers. This plant is to be managed by Louis E. Hauk.

The American Service Co.'s 200-locker plant at Opelika managed by O. A. Thompson.

A 66-locker plant (with room for expansion) at Elba under the management of D. H. James.

EAST LANSING, MICH.

EAST LANSING, Mich.—First Iceberg self-contained refrigerated locker system to be installed in Michigan will soon be open for inspection at Black's market, 313 E. Grand River Ave. here.

LE GRAND, CALIF.

LE GRAND, Calif.—A 50-locker refrigerated food storage plant has been erected here by H. V. Lambert.

Under Way . . .

FORT SCOTT, KAN.

FORT SCOTT, Kan.—Contract for installation of a 350-locker, Frigidaire-equipped cold storage plant in the rear of Bruce Maguire's grocery and meat market here has been awarded to Filizola Office Equipment Co. Installation is scheduled to start immediately under the supervision of W. E. Evans of Wichita, district representative for Frigidaire locker systems.

STANTON, NEB.

STANTON, Neb.—A 150-locker cold storage plant, complete with sharp freezing room and processing facilities, is to be constructed here by the Stanton Cooperative Creamery. Ground for the plant is now being cleared.

CEDAR RAPIDS, IOWA

CEDAR RAPIDS, Iowa—A \$100,000 cold storage plant which will include three sharp-freeze rooms and two cooler rooms is being built here by Hubbard Ice & Fuel Co.

BRITTON, OKLA.

BRITTON, Okla.—A refrigerated locker plant is being constructed for Pope's I. G. A. Store here. This plant will be equipped to handle all types of meats, fruits, and vegetables.

TORRANCE, CALIF.

TORRANCE, Calif.—A \$1,500 locker plant is being erected here by Frank Ek. Floor area of this plant will be 20 x 40 feet.

BLOCKTON, IOWA

BLOCKTON, Iowa—A \$6,000 locker plant and grocery store is scheduled to be opened here soon by Joe R. Lines, formerly with Dahl's Market at Des Moines, Iowa.

AND THREE IN TEXAS

DALLAS, Tex.—Central Engineering & Supply Co. is now engaged in building and equipping three refrigerated locker storage plants at Forney, Mexia, and Fairfield, Tex.

Burgess Askew of Nashville Heads Newly Organized Tennessee Locker Association

F. Fessey, Nashville; Arch Henderson, Donelson; Paul Bycroft, Gallatin; W. Ed Brooks, Knoxville; and Robert Barnes, Jackson.

Among the principal speakers at the conference was Dr. V. L. Fuqua, head of the division of foods, fertilizer, and dairies, State Department of Agriculture, who promised the cooperation of his departments.

Burgess Askew of Nashville was named president of the Tennessee group. E. J. Davis of Brownsville was named vice president and J. C. Snow, meat specialist of the University of Tennessee Extension Services, was elected secretary.

Directors named include: R. B. Snowden, Memphis; Jenning Jones, Murfreesboro; W. E. Hodges, Morristown; R. A. Stevens, Dyersburg; Ernest Henegar, Lewisburg; Dr. W.

Dallas Firm To Install Plant In Wichita Falls

WICHITA FALLS, Tex.—Contract for the building and equipping of a \$30,000 refrigerated locker storage plant for Wichita Frozen Food Lockers, Inc. has been awarded to Matthews Engineering Co., Dallas, Tex. The plant is to be completed on or about Aug. 15.

At first the plant will have only 400 lockers, but ample space and refrigeration facilities will be provided for addition of 500 more lockers. Temperature in the 25 x 45-ft. locker storage room will be held at 0° F.

In addition to the locker room there will be a combined chill and aging room measuring 18 x 20 1/2 feet; a sharp-freeze room measuring 5 feet 7 inches x 10 feet; and a 12 1/2 x 18-ft. curing room.

"Novoid corkwood" insulation will be used throughout, with 6 inches in the locker room, 8 inches on the sharp freezer, and 4 inches on the chill and aging room.

All-Steel lockers are used in the plant, rental rates being \$14 per year for the two lower compartments, \$12 for the middle section, and \$10 for the top compartment.

Opened in February, the plant now has most of its lockers rented, with most of the renters being residents of Greenville, who evidently see in the plant an opportunity to effect substantial savings on their meat purchases. These people buy a "side" of meat from the packing house, and bring it to the plant for processing and storage, Mr. Nevinger reports.

No intensive promotion was used to announce opening of the plant, it was said, other than handbills, one or two newspaper advertisements, and talks at Farm Bureau meetings. Response so far has been encouraging, Mr. Nevinger reports, but he estimates it will take at least a year to get the plant really going.

Southeastern Iowa Locker Owners Hold Meeting At Mt. Pleasant

MT. PLEASANT, Iowa—Approximately twenty-five owners and operators of refrigerated locker storage plants in southeastern Iowa met here recently to discuss their problems and exchange ideas. Lyle Shallenberger was elected chairman of the group. Frank Smith of Ames, secretary of the state locker association, was a speaker.

REA To Finance Cold Storage Plant At Grove Hill, Ala.

GROVE HILL, Ala.—Plans have been completed for a new cold storage and quick-freezing plant to be erected here at an approximate cost of \$25,000.

The community is to supply \$2,000 of this amount, while the balance is to come in the form of a loan from the Rural Electrification Administration.

Officers of the organization sponsoring the new plant are James S. Pugh, president, and George L. Whatley, secretary-treasurer.

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Serviceman Must First Learn How Ice Cream Is Made Before He Can Do Counter Freezer Service Properly

Editor's Note: This is the second instalment in a contemplated series of articles on application and servicing of a certain class of refrigeration equipment used by merchants—generally called "low temperature" equipment and comprising ice cream counter freezers and cabinets.

First part of the series takes up counter freezers, and the author has started off by outlining some of the factors in ice cream manufacture with counter freezers that service men should know.

By Arch Black

OVERRUN DEFINED

Overrun (sometimes called "swell" or "yield") is a term applied to the volume of ice cream made in excess of the original amount of mix which was put in the freezer, and it is the direct result of an incorporation of air.

For example, if $2\frac{1}{2}$ gallons of mix are placed in the freezer and frozen into 5 gallons of ice cream, we say that the product attained an overrun of 100%.

In other words, overrun is the per cent by volume (not weight) of air and the slight expansion of water frozen, which is incorporated into the mix while it is being agitated in the freezer. Without air in it, ice cream tastes something like whipping cream before it is beaten—a rather sickening, sweet liquid, which could not be consumed in any quantity.

In the manufacturing of one's own brand of ice cream an overrun of 90 to 100% is usually recommended, as excessive overrun cheapens the quality of ice cream.

HOW TO DETERMINE OVERRUN

To determine the amount of overrun, the following are required: A small scale with a range not over 4 lbs., a 1-pint measuring cup, and a spatula or flat knife.

The test for overrun is made during the whipping period at any time during the run by weighing. As an example, first weigh the pint measuring cup and let us assume that it weighs 2 ounces. Now fill the cup, level-full, with ice cream mix direct from the mix can, before freezing, and weigh it. We will assume that it has a gross weight of 20 ounces (cup, 20 ounces; mix, 18 ounces).

If 100% overrun is desired, the finished ice cream as it is drawn from the freezer should weigh one half of the original mix weight. In other words, if the net weight of the mix was 18 ounces (gross weight 20 ounces less weight of cup, 2 ounces), the finished ice cream should weigh half of the weight of the mix—9 ounces.

If an 80% overrun is desired, the same procedure should be followed, weighing the mix to where the finished ice cream will weigh 10 ounces net ($18 + 1.8 = 10$).

Another way to consider overrun is if we put $2\frac{1}{2}$ gallons of mix in the freezer and 100% overrun is desired, we can expect 5 gallons of finished ice cream from the freezer ($2\frac{1}{2}$ gallons $\times 2 = 5$). If 80% overrun is desired, then we can expect 4.5 gallons of finished ice cream from the freezer ($2\frac{1}{2}$ gallons $\times 1.8 = 4.5$ gallons).

If a scale which is adjustable is used, easier calculations are possible. Merely set the scale pointer at zero with the cup on the pan. The scale will then only weigh the contents of the cup.

Recently for counter freezer users a new overrun scale has been developed and is known as the "Air Whip Ice Cream Tester." Fig. 1 illustrates this tester.

Dial of the scale is graduated in percentage of overrun, and the overrun desired can be obtained, it is claimed, to an exact degree. The dial is divided into two parts, one section which is colored blue is for quart packages and the other which is colored yellow is for pint packages, which enables the operator to check each package for correct overrun. This scale is manufactured by Karl Distributing Co., 5039 Irving Park Blvd., Chicago.

OVERRUN IN FRUIT ICE CREAM

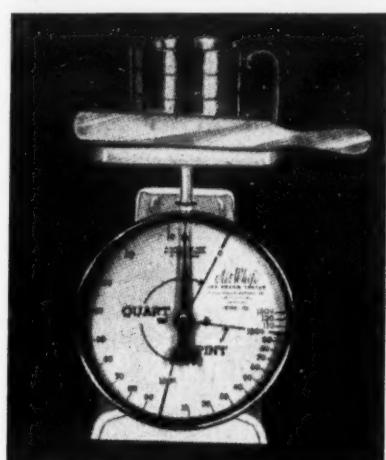
There is considerable confusion in the methods used to figure the gross overrun in fruit ice creams and others made with the addition of large amounts of flavoring materials at the freezer.

This is caused by the fact that some ice cream manufacturers figure the gross overrun on the basis of the volume of mix. Others compute it based on the volume of mix plus any fruits or flavoring materials added. The latter—volume of mix plus flavoring—is seemingly most logical and it is on this understanding any further comments, in these articles, on overrun are based.

SUMMARY OF DISCUSSIONS ON WHAT ICE CREAM IS

Every counter freezer operator should realize that the percentage of overrun is in direct proportion to his profit and the quality of his ice cream. A low overrun is unprofitable while too high an overrun re-

Fig. 1—Overrun Tester



Air whip ice cream tester, shown with spatula and measuring cup.

sults in a poor quality of ice cream.

Therefore the operator should study his individual requirements, and it is important that the service engineer has some idea of what it is all about, otherwise he may find himself looking for the trouble in the refrigeration system where it does not exist.

When an owner or operator of a counter freezer calls for service he may be fully of the opinion that there is something wrong with the refrigerating equipment when he does not obtain a finished ice cream product to meet his expectations. Particularly so is this true with a new or inexperienced operator.

The average operator will have little if any knowledge pertaining to the refrigeration system. His studies should be along the lines of the manufacturing of the ice cream, recipes for same, and such like. No attempt has been made in these articles to cover fully the subject of ice cream as a whole or even the component parts. There are a number of books and magazines published that treat wholly or in part ice cream making.

The matter that has been written covers the subject sufficiently to bring out such points that will aid the service engineer to correctly diagnose the trouble reported. Naturally, the refrigeration system should be checked, but if all indications are toward the trouble lying elsewhere there will be many questions to ask the operator, and to build and maintain his confidence these must be put to him intelligently.

Bear in mind such points as butterfat having a bearing on the quality of ice cream; homogenized mix aiding in securing the desired overrun and likewise do eggs in the mix not only aid overrun but are helpful as a stabilizer.

Complaints of ice cream losing its smoothness may be caused by an excessive use of serum solids or result in low overrun.

Slow freezing may be among the more common complaints registered and while there are many causes for this as will be covered by later articles and all of which should be checked first, it is still worth remembering that too much sugar in the mix will somewhat retard freezing.

Standards For Porcelain Enamel Finish on Refrigerators Adopted at Capital Meeting

WASHINGTON, D. C.—At a meeting called by the National Bureau of Standards on June 26 the proposed standard for porcelain enamel on the exterior and interior of refrigerators was adopted as modified and its circulation for formal acceptance recommended.

F. W. Reynolds of the National Bureau of Standards served as chairman for the conference which was attended by representatives of refrigerator manufacturers, distributors, consumer organizations, the porcelain enameling industry, enameling sheet manufacturers, and testing laboratories.

After discussion, it was agreed that the proposed standard should become effective for new production 30 days after the announcement of its establishment by the National Bureau of Standards.

This standard provides minimum specifications, which include inspection rules and methods of test, for porcelain enamel on both exterior and interior of domestic and commercial refrigerators. The general acceptance of this standard, and the widespread use of labels certifying conformity with it, according to its sponsors, will improve the quality of porcelain enameling and aid prospective buyers in identifying refrigerators with this finish.

Among the consumer groups endorsing the standard, according to the volume of correspondence received and read by F. W. Reynolds, were the following: American Home Economics Association, American Association of University Women, National Council of Women, and the Women's National Institute. Typical of the letters read was one from Gertrude E. Fox, chairwoman, Women's National Institute, which read as follows:

"We do want to go on record as favoring standards and the labelling of refrigerators as conforming to these standards. Women generally buy with more confidence when merchandise is labelled as conforming to standards promulgated by the National Bureau of Standards."

In his introductory remarks, Mr. Reynolds explained the activity of the National Bureau of Standards in connection with the development of standards for an industry. He made it clear that the bureau merely provided the vehicle by means of which standards acceptable to the majority affected by the standard are drawn up. Responsibility for their application and use, he explained, rests on the will of the majority.

Harry W. Ewald, director of merchandising for the Porcelain Enamel Institute, in explaining the need for the standard, called attention to advertising that did not set forth unmistakably whether both the exterior and interior or only the interior of so-called porcelain enameled refrigerators were porcelain. Adding further confusion, Mr. Ewald said, the customer herself is unable to distinguish between new porcelain and synthetic enameled refrigerators.

Even the experts on porcelain enamel, according to Mr. Ewald, are unable to distinguish between new refrigerators of porcelain and synthetic enameled finishes at a distance of 10 feet. "If these technical experts can't tell the difference, what chance has Mrs. Jones?" Mr. Ewald asked.

He pointed out that the standard provided for a standing committee of a varied makeup whose responsibility it will be to advance the specifications as the science of enameling advances.

The COOK AUTOMATIC COUNTER DISPENSING FREEZER



Cook Automatic "Self-Contained" Freezer



2 MODELS

SELF-CONTAINED: Refrigeration unit is permanently built into freezer illustrated above.

REMOTE: Requires even less space because refrigeration unit is installed separately in any convenient location.

These freezers are especially designed for

Frozen Malted
Frosted Orange
and the NEW
Frozen Sherbets made
from Fresh Fruits

What your prospects can make big money on, YOU can make big money on. And the counterman who serves a 10¢ FROZEN MALTED made in a Cook Automatic knows that he's taking in 7¢ gross profit, that on 600 drinks he grosses \$42.00. Profit POTENTIAL on a single machine is exceedingly high: more than \$5.00 per hour! The only self-contained 6-quart portable freezer for counter or back bar—entirely automatic, electrically refrigerated, foolproof. All parts standard, by manufacturers nationally famous for quality. No refrigeration installation needed for self-contained unit. To operate, just plug in.

In short, a complete package unit that will interest every drug store, soda fountain, wayside stand. Carried on by the tremendous, rapidly growing wave of demand for Frozen Malted, every sale produces two more sales—and YOUR DISCOUNT IS LARGE.

BECOME A COOK AUTOMATIC DISTRIBUTOR AND REAP TREMENDOUS PROFITS!

In many sections distributors are already cashing in handsomely, but some choice territories are still open.

Write, wire or phone today for attractive distributor proposition

ARGOS PRODUCTS CORPORATION

67-69 Irving Place, New York

Telephone Gramercy 7-4357

Chicago Office: 1134A Merchandise Mart

A NEW SODA WATER MAKER ... AND A NEW SALES LEADER THE PERFA-SODA CARBONATOR

* CONSIDER THESE SALES FEATURES —

Automatic operation . . . silent action . . . foolproof performance . . . space-saving compactness . . . simple installation . . . elimination of electric motors . . . amazing low cost . . . added economy . . . sensational efficiency . . . full guarantee. So post yourself NOW on this economical, 1941 Perfa-Soda Carbonator that cuts high overhead, eliminates costly servicing needs, has the capacity to meet any need. It's the new method of soda water making . . . at a new low cost.

The Perfa-Soda Carbonator is specially designed for Bars, Taverns, Drug Stores, Confectioneries, Miniature Bars and Fountains. It carries a full and unqualified one-year guarantee against defective workmanship and material.

WRITE NOW FOR ILLUSTRATED FOLDER . . .

MAKERS OF THE NATIONALLY KNOWN PERFA-DRAFT AND PERFA-TEMP EQUIPMENT



Valuable sales territories still available. Write today for full franchise particulars. Let us send literature describing this new, efficient, automatic, low cost Carbonator. A request on your business stationery will bring complete information.

HUDSON MFG. COMPANY, INC.

4105 Cass Ave. Detroit, Michigan

Cooling Use Grows In Philippines

MANILA, P. I.—Air conditioning is a growing field in the Philippine Islands, reports the American commercial attache here. Annual sales have increased steadily since 1935, when the business became firmly established here.

It is estimated that a total of 250 systems are now in use. There is no foreign competition, all installations having been made by three American firms.

The high humidity, the constant heat, and the generally tropical character of the country make the Philippines an ideal place for the growth of the air conditioning business, the attache reports.

Education of the public by local air conditioning engineers has created an increasing public demand for installations, and during the past two years new public and private construction has increased sales. One department store installation was made at a cost of P100,000 (One Peso equals approximately 47 cents American).

Portable air conditioning units of $\frac{1}{4}$ -hp. capacity are popular for single room installations. The air-cooled type sells for P750. Larger installations run from P2,000 to P170,000.

Evaporative condensers and cooling towers are used because of the high cost and the high temperature (85° F.) of the city water in Manila. At the present stage of development, this city offers the best sales opportunities, but there

are likewise good possibilities in Iloilo and Cebu.

Local installations of air conditioning are hampered by high ceilings and sheet iron roofs, it is said. Because of wide windows that open or close the entire side of a house, the average dwelling is unsuited to air conditioning. For these reasons, insulation is required.

Theater Air Conditioning Tops Singapore Market

SINGAPORE, British Malaya—Air conditioning of theaters is becoming quite extensive here, according to the office of the American Trade Commissioner here. The application of air conditioning is also reaching hospitals, offices, and homes, to a certain extent, it is reported.

Best Customers of U. S. Refrigeration and Unit Air Conditioning Mfrs. For May 1940

	Household Units		Refrigerator		Conditioners and Parts Value
	No.	Value	No.	Value	
Canada	2,602	\$164,259	203	\$26,461	\$153,189
Brazil	875	71,222	113	6,711	13,951
Venezuela	759	69,680	83	16,080	6,701
Argentina	...	...	...	...	88,369
Colombia	...	...	45	8,916	16,529
Panama, C. Z.	791	71,465	21	6,546	5,882
Mexico	688	60,373	85	7,735	14,519
New Zealand	705	31,135	...	...	38,197
Australia	688	45,841	107	10,052	35,152
South Africa	...	...	45	7,170	4,163
Hong Kong	...	...	...	...	7,556
British India	...	...	...	...	8,137
Netherlands Indies	...	...	...	...	14,297
British Malaya	...	...	...	...	...
United Kingdom	...	...	...	...	18,790
France	...	...	...	...	6,430

War Blasts Market In French Indochina

SAIGON, French Indochina—Sales possibilities for electric refrigerators are abnormally limited here at present, due to the international situation, according to a recent report by the American Consulate. Until a few months ago, however, Indochina was becoming a promising market.

Refrigerators most in demand are the 2 and 3-cu. ft. household models and the 4.5 and 8-cu. ft. types for restaurants, bars, and grocery stores. Reach-in refrigerators and display cases are used to a small extent.

Although household marketing is done daily, refrigeration is necessary during the entire year.

'Chiseling' In South Africa, Too

Sales Have Been Slipping, So All the Familiar 'Evils' Are Present as Competition Toughens

JOHANNESBURG, South Africa—Competition is extremely keen in the South African refrigerator market, according to reports by the American Commercial Attache here. The landed cost of a 4-cu. ft. box is said to be slightly in excess of £18. Keen bidding for business causes these machines to sell as low as £19. 10 s. with free installation and a five-year guarantee.

The American Attache reports that there are now some 5,000 unsold refrigerators in the hands of distributors and dealers here, due partly to the manufacturers enforcing a quota system on their agents, and the receipt of a large consignment of "orphan" machines.

The demand for electric refrigerators has been declining for the past two years, due largely to a diminishing building program. Prac-

tically all of the new apartment buildings being constructed feature the installation of some American make refrigerator.

Dealers are numerous and one or two of the larger distributors place their machines on consignment. It is estimated that more than 70% of the refrigerators sold to individuals are on the hire-purchase plan. A recently proposed hire-purchase law has certain provisions that will obviate many of the objectionable practices now present.

Many dealers are selling refrigerators for as little as 5% down with the balance spread over a period of 24 months or more. Competition is between American makes and other makes sold, including the British Electrolux (kerosene and electric) Coldair (British G-E) and Moffatt (Canadian).

Refrigerator a Dining Room Showpiece In Well-To-Do El Salvador Homes

SAN SALVADOR, El Salvador—Because it is the general custom to keep the refrigerator in the dining room, El Salvador is becoming a better market for American electric refrigerators, in the opinion of the American Consul here. "Pride of possession" becomes a factor in stimulating the purchase of refrigerators, as people like to have their dining rooms as well equipped as those of their friends.

All refrigerators are purchased by a small well-to-do class, and virtually all of the business in the country is done by American manufacturers, with no competition from Europe.

According to rough estimates by dealers, there are now approximately 3,000 refrigerators in use here. Sales

are equally divided between the 4, 6, and 8-cu. ft. models. All are of painted metal rather than porcelain, and there seems to be a slight preference for hermetic machines.

Most demand comes from home owners, but drug stores, groceries, and provision stores in the large cities have installed large refrigerators of the household type. Sales of regular commercial equipment are rare.

During 1939 there was a considerable increase in sales of electric refrigerators to quite small suburban and rural provision shops. These small shop owners rent space in the refrigerators for a few centavos to nearby families, thereby enabling them to meet their instalments.

Honolulu—An Appliance-Eye View

G-E Merchandise Manager Sees Quality Buying, Superior Salesmanship As Market Characteristics

BRIDGEPORT, Conn.—Praises of the Hawaiian Islands from returning travelers are not exactly a novelty but A. L. Scaife, merchandise manager of the General Electric appliance and merchandise department, managed to see a lot of things in Honolulu during April that aren't found in the songs—such as excellent business volume, quality buying, and salesmanship that was far above par for the home or domestic course.

Mr. Scaife, together with Earl Norling, of the G-E household refrigeration section and Marshall Ross of the heating device section, left Bridgeport late in March to assist in the conduct of the three-day sales meeting sponsored by W. A. Ramsay, Ltd., General Electric full-line appliance distributor in the islands. In San Francisco they were joined by George West and Harold Wade, district manager and service manager respectively for the G-E appliance and merchandise department in San Francisco. Mrs. Scaife, Mrs. West, and Mrs. Wade completed the party.

The Ramsay meeting, on April 8, 9, and 10, was for the dealer organization and retail sales force, brought in from all of the islands, and was held in the Army Y.M.C.A. Approximately 115 salesmen attended. Approximately 80% of the group were Chinese, Japanese, Portuguese, Mr. Scaife declared. About one-third of the islands' population is in Honolulu, and approximately 40% of it is Japanese, and these facts have had an undeniable influence on the status of the electrical appliance business.

"I have never seen as remarkable a group of individual sales records chalked up at any gathering any place as were in evidence at this meeting," Mr. Scaife said. "One salesman of the Hawaiian Electric Co., in particular, had a record beating any achievement for an individual salesman that we have ever come across in our company."

"These men seem to 'use the user' to a far greater extent in their

selling technique than we do here. They follow up appliance sales and keep talking to their customers afterwards. Most of the dealers are full-line dealers and they made an ideal and enthusiastic audience for the full-line story we presented. The service job done on the islands is also exceptional, as service engineers are sent back to the mainland for training every two or three years."

Another characteristic of the appliance business in the islands, according to Mr. Scaife, is that Hawaiian buyers refuse to purchase anything but the best. Porcelain-finished refrigerators, and the more expensive spinner-type washers are typical purchases. The dealer stores, on the other hand, are often not at all pretentious, sometimes definitely ramshackle. Since the climate is never very extreme, most houses and stores are not very well constructed and are open to the weather, yet equipment and appliances are of the most deluxe type.

★★★★★



Mills Condensing Units
By Mills Novelty Company
4100 Fullerton Ave., Chicago, Ill.

★★★★★



"We believe that it will be of interest to you to know that we are of the opinion that we have definitely increased the volume of sales of Manhattan V-Belts through the use of Air Conditioning & Refrigeration News as a regular advertising medium. This advertising, we are sure, brings our message directly to the men who specify V-Belts for replacement. We base this opinion upon the number of requests we have received from your readers for our catalogs and other information on our fractional horsepower V-belt line.

"We are confident this is advertising well placed."

— J. J. DeMario, Adv. Mgr., The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.

To endeavor to dispute facts is futile. Manhattan has used the NEWS as a "regular advertising medium" over a sufficient period of years to form a definite opinion as to whether it has increased sales.

When the product is right and the price is right, advertising in the NEWS usually gets results. It reaches a market of unusually active buyers.

Air Conditioning & Refrigeration News
"The Newspaper of the Industry"

CLASSIFIED ADVERTISING

RATES: Fifty words or less in 6-point light-face type only, one insertion, \$2.00, additional words, four cents each. Three consecutive insertions, \$5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS WANTED

SINGLE MAN 24 now employed in domestic service desires change. High school and Industrial Training Institute graduate. Anything in refrigeration or air conditioning sales or service considered. Salary secondary. Go anywhere. Box No. 1244, Air Conditioning & Refrigeration News.

REFRIGERATING ENGINEER with extensive experience in design, development, production and application of thermostatic and automatic expansion valves, constant pressure valves and water regulating valves for all refrigerating purposes, desires new connection. Am thoroughly familiar with the requirements of the refrigerating industry and have contact for distribution of these devices. Box No. 1245, Air Conditioning & Refrigeration News.

GRADUATE MECHANICAL ENGINEER with fifteen years experience in the design and development of compressors, cabinets and associated parts desires a position as development or project engineer. Has been employed as chief draftsman and chief experimental engineer with large manufacturer. References will be furnished. Box No. 1247, Air Conditioning & Refrigeration News.

FRANCHISES AVAILABLE

SEND FOR PRICES and literature on the General 1940 all streamlined refrigerator display case line. Over 40 years experience manufacturing good commercial refrigerators. On a comparative price test with other makes of equal specifications, prices are lowest in the country. GENERAL REFRIGERATOR & STORE FIXTURE CO., 5th & Bainbridge Sts., Philadelphia, Pa.

Filtrine

Water Coolers—Filters
Cafeteria—Industrial
Commercial Remote
Surge Tanks Pipe Coils
Filtrine Mfg. Co., Brooklyn, N.Y.

KERO TEST

Valves and Fittings
The Standard of the
Industry
Kerotest Manufacturing Co.
Pittsburgh, Pa.

Condensing Units for every
commercial refrigeration
and air conditioning require-
ment . . . Also
packaged air conditioners.

CURTIS
REFRIGERATION
AIR CONDITIONING
AND COMMERCIAL

Curtis Refrigerating Machine Co.
Division of Curtis Manufacturing Co.
1912 Kienlen Ave., St. Louis, Mo.

Anaconda Copper
Refrigeration Tubes

THE AMERICAN BRASS CO.
FRENCH SMALL TUBE BRANCH
General Offices Waterbury, Conn.

EQUIPMENT FOR SALE

AIR CONDITIONERS, General Electric and Fairbanks Morse. All brand new in original crates, beautiful walnut cabinets, size about 42 inches long, 41 inches high, and 19 inches deep. All AC. 90 Fairbanks Morse $\frac{3}{4}$ ton air cooled, cost about \$400. Our price \$150. 74 General Electric 1 ton water cooled, cost about \$500. Our price \$175. Also 1 ton General Electric highside \$125. G & G GENUINE MAJESTIC REFRIGERATOR AND RADIO PARTS SERVICE, 2429 Wabash, Chicago.

BRAND NEW Westinghouse one ton low-sides complete with fans, coils, expansion valves, manual controls, heat exchanger, and cabinet \$32.50 each. Brand new General Electric $\frac{1}{2}$ H.P. and 1 H.P. high-sides also available. Write for details. ASSOCIATED REFRIGERATOR PLANT, INC., 3028 W. Hunting Park Ave., Philadelphia, Pa.

BRAND NEW air cooled High Sides at exceptionally low prices. These condensing units are complete, ready to be plugged in. They are made up with all new parts; General Electric or Frigidaire Compressor, General Electric or Delco Motor, heavy duty condenser, heavy base, receiver, valves, etc.; charged with Methyl or "Freon." They are available in $\frac{1}{2}$ - $\frac{1}{4}$ and $\frac{1}{2}$ H.P. GENERAL REFRIGERATORS CORPORATION, 518 East 20th Street, New York, N.Y.

REPAIR SERVICE

SPECIAL PRICES: G.E. DR-1—DR-2; domestic Westinghouse and Majestics \$24.50 to customers purchasing ten or more units a year. Regular price \$27.00. One year unconditional guarantee. Place order for any Model G.E. Westinghouse or Majestic sealed unit advising complete model and type needed. Shipment will be made from stock same day. Return old unit later. Our production lines turn out completely rebuilt sealed units mechanically comparable to manufacturer's. We offer replacement service inferior to none at prices that enable you to realize profit on resale. Send for complete Replacement Schedule 40B. REX REFRIGERATION SERVICE, INC., 2226 South State Street, Chicago, Ill.

WORLD'S LARGEST rebuilders of refrigeration units. Original, Genuine Majestic replacement units and parts for refrigerator and radio. Rebuilders of Majestic, General Electric, Grunow, Westinghouse, Coldspot, Servel, Gibson units at \$25 up with 18 months' guarantee protection bond. 500 units on hand. Send for catalog. G & G GENUINE MAJESTIC REFRIGERATOR & RADIO PARTS SERVICE, 2429 Wabash Ave., Chicago.

COMMERCIAL AND DOMESTIC controls reconditioned like new at a small cost. All work guaranteed for one year. We also repair all types of relays with same guarantee. UNITED REPAIR SERVICE, 342 West 70th St., New York, N.Y., TRafalgar 4-2557-8.

FREE HERMETIC CATALOG complete with prices on refrigerator units, rebuilding and exchange service. General Electric, Westinghouse, Majestic, Frigidaire and a complete stock of Grunow compressors and parts. Immediate shipment. For your copy specify catalog A. SERVICE PARTS COMPANY, 1101-3 North 24th Avenue, Melrose Park, Illinois.

CONTROL REPAIR service. Your controls repaired by expert mechanics, with special precision equipment. Supervised by graduate engineers. We stress perfection and dependability before price. One year guarantee on domestic controls. Any bellows operated device repaired. HALECTRIC LABORATORY, 1733 Lakeview Road, Cleveland, Ohio.

PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

Kitchen's Half-Century
Of Progress Is Theme
Of Utility's Contest

(Concluded from Page 1, Column 4) in his or her own kitchen or laundry.

The contest has been divided into two divisions—one for customers, the other for employees—with 17 prizes in the customer division and six in the employee competition. Prizes have been split up into three classifications, the first including a Frigidaire refrigerator, Stromberg-Carlson radio, Easy washer, Easy ironer, a clothes drier, and a dishwasher.

In the second group are a vacuum cleaner, a table model radio, a roaster, a food mixer, I.E.S. lamps, a coffee maker, and a toaster. Third group includes an electric clock, I.E.S. lamps, a toaster, an electric iron, a table radio, an electric fan, and an electric shaver.

To enter the contest, the customer or employee must fill out a special card, indicating which award in either of the three classifications he or she would prefer in case the entry is a winner.

Customer contest will have three first, four second, and 10 third awards, and the employee contest one first, two second, and three third prizes. In addition, each entrant will receive a "surprise gift" upon submitting his entry blank.

Westinghouse Plans

\$560,000 Addition

At Mansfield

(Concluded from Page 1, Column 4) facilities to meet increasing business demands anticipated by company officials.

Work will start shortly on a warehouse providing 126,000 sq. ft. of space and costing \$560,000, Mr. Kohnstamm announced. This warehouse project will complete a program which began recently with the construction of a 1,000-foot industrial bridge, costing \$150,000, which connects the vitreous enamel and main assembly buildings of the Mansfield plant.

The second major feature of the expansion program recently announced and on which work now is in progress, is a new metal stamping building costing more than \$500,000. Another item in the program is the additional construction of two stories on one of the main buildings of the plant.

Cost of these new buildings and the warehouse, including the equipment that will be installed in them, will total approximately \$1,500,000.

The entire program, when completed, will increase by 24% the present \$6,230,000 value of the Mansfield plant. The plant's capacity in production of household refrigerators will be increased by one third and the present warehouse facilities will be increased by close to 50%. Truck dock facilities will be enlarged by addition of space for 14 trucks.

"The Mansfield plant, in the five years prior to 1940, has produced 4,274,000 units of household merchandise," Mr. Kohnstamm said. "This production includes refrigerators and ranges, water heaters, irons, roasters, waffle irons, toasters, and sandwich grills.

REFRIGERATOR OUTPUT UP 50%

"To date, this year, we have had a steady increase in business. In the first six months of 1940, our refrigerator output exceeded the figure for the first six months of 1939 by 50%.

"This increase, plus the continued favorable business prospects for the balance of 1940 and 1941, has prompted us to undertake the expansion program. We feel that expansion of our facilities will place us in even more favorable position than in the past to provide the luxury of electrical home equipment at more reasonable cost to more and more American homes.

"With the recent reduction in cost of the refrigerators and ranges, the rapid expansion of electric lines to many thousands of rural homes, and the overwhelming acceptance of electric cookery as well as electric refrigeration, demand for these and other electrical appliances far exceeds the requirements of a few years ago. The electrical appliance industry must be geared to meet this new demand."

STRUCTURAL DETAILS

The new warehouse, 220 by 320 feet in size, will be adjacent to the present warehouse and office building of the Mansfield plant. The structure will be of normal height for a four-story building, but there will be only two floors, 24 feet high, to make for ease of handling wares.

The second floor will extend over about half of the first floor, leaving space for future expansion of the second floor, if desired, of 36,000 sq. ft.

THE BUYER'S GUIDE

BIGGER PROFITS ARE YOURS



WITH THIS

SUPERBLY STYLED LINE

Sherer
SHERER-GILLETT CO., MARSHALL, MICHIGAN

Sherer's always in front with equipment developed to open new fields for condensing units. Your efforts are backed by trade paper advertising, free store layouts and prospect follow-up. Write for catalog and franchise details.



Chieftain

Are you buying mass or precision? The alarm clock is massive, bulky, noisy and inaccurate. A fine watch is light, compact, quiet and precise.

Use this method in comparing condensing units.

TECUMSEH PRODUCTS CO., TECUMSEH, MICH.

Canadian distributor: Refrigeration Supplies Co., Ltd., London, Ontario

• A convenient new tool which makes possible a rapid and efficient reaming job on both the inside and the outside edges of copper, brass or aluminum tubing.

Tubing is introduced from one end of tool for inside reaming and from the other end for outside reaming. The tool cuts in either direction and is self-centering. It has three hardened, hollow ground tool steel cutters. The cutters are protected against damage when not in use, by outside shell of tool. Body is knurled for easy handling. Handles all sizes of tubing from $3/16$ " O.D. to $1\frac{1}{2}$ " O.D.

IMPERIAL BRASS MFG. CO.
565 S. Racine Ave., Chicago, Ill.

IMPERIAL

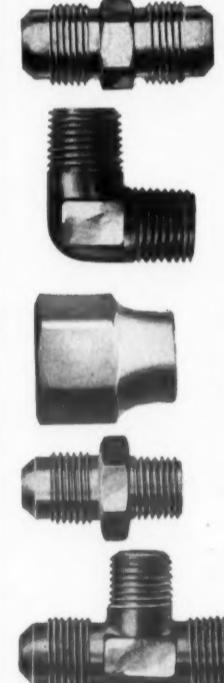
VALVES • FITTINGS • TOOLS • STRAINERS
DEHYDRATORS • CHARGING LINES • FLOATS

No. 208-F Inner and
Outer Reamer
Price, each, \$1.20



ORDER FROM
YOUR JOBBER

CRAFT



To every worthwhile workman the greatest reward that can be paid, is the public recognition that he is a finished craftsman, and that the products of his head and hands have been accorded complete acceptance.

Beginning with the original design, from the drawing boards of men who have made fitting production their life work, the craftsmanship and skill of the tool designer, the die sinker, the hot-forge operator, the automatic lathe setters and operators, all contribute their meed of perfection to the finished product.

At Commonwealth, the production of good fittings is not simply routine. It is bred into the organization by a basic policy that demands the acme of craftsmanship. No detail of design, production, or inspection is too minute to warrant attention.

Many, many crafts are concerned in the production of Commonwealth fittings—all working to the end of producing fittings "Built Right to Stay Tight."

Fittings in every standard combination, hundreds of patterns of semi-standard requirements, and special fittings with any desired combination of pipe and tube ends are readily available.

Send for Catalog No. 38.

COMMONWEALTH BRASS CORP.

Commonwealth at Grand Trunk RR.
Detroit, Mich.

A SINGLE DIAL
REPLACEMENT
For Practically Universal Application

Ranco
R.J.S.-830
CONTROL

SEE YOUR
RANCO JOBBER

Ranco Inc., Columbus, Ohio, USA

Specify PENN
AUTOMATIC CONTROLS AND SWITCHES
FOR RECOGNIZED RELIABILITY
Write for Catalog
PENN ELECTRIC SWITCH CO.
GOSHEN, INDIANA

New Service Firm

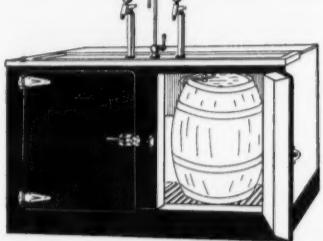
SANTA ANA, Calif.—Refrigeration Service Supply Co. has been organized by W. B. Scott at 1239 W. 5th St. here. E. R. Scott of the same address is listed as doing business under the name of Scott Refrigeration Service.

BAR-BOY --- DIRECT DRAW BEER SYSTEMS

BUILT RIGHT -- PRICED RIGHT
SIMPLE TO INSTALL

Available in 2-3-4 Keg Sizes.
Ice Water Faucet Standard on All Models.
Bottle Compartment and Ice-Maker Optional Equipment.
Full Line of Beer Equipment, Including Walk-In Type Pre-Coolers and Dry-Storage Bottled Beverage Coolers.

INQUIRE TODAY!



FOGEL REFRIGERATOR COMPANY • Since 1899
16th & Vine Sts., Phila., Pa.

Replacement High Side Floats for HERMETIC Units

Aminco No. 369 is recommended for replacement, on hermetic units. A complete replacement it should not be disassembled. An Aminco seat prevents corrosion and eliminates float trouble due to acid in the system. No. 368 is suitable for replacement in a number of well-known refrigerators. May be used with SO₂, CH₂Cl and "F-12." Send for bulletin No. 30.

AMERICAN INJECTOR CO.
1481 FOURTEENTH AVENUE, DETROIT, MICH.
Pacific Coast: Van D. Clothier, 1015 E. 16th, Los Angeles
Export: Borg-Warner International Corp., 310 S. Michigan Ave., Chicago, Ill.

BALANCED-ACTION

for Easier Operation

Balanced-Action equalizes pressures on both sides of the valve seat at the instant of opening. Equalization takes place through a balancing channel located in the valve stem. This exclusive Henry feature assures that the valve will always open positively and close easily.

HENRY BALANCED-ACTION DIAPHRAGM PACKLESS VALVES
HENRY VALVE COMPANY
1001-19 N. SPAULDING AVE., CHICAGO, ILL.
AND SOLD BY LEADING JOBBERS

A complete line to meet every requirement

With nearly 40 years experience as a background . . . the Puro line offers every dealer unusual profit opportunities. Write.

Puro
WATER
TRADE MARK

ELECTRIC WATER COOLERS
Puro Filter Corp. of America, 440 Lafayette St., New York.

MAKE BIGGER PROFITS

TYLER full line dealers and distributors are setting new records in sales and profits. Tyler's big line enables you to completely outfit modern food stores and opens up hundreds of live prospects in other fields. Famous Welded Steel construction. Phenomenal values. Display cases . . . Reach-Ins . . . Walk-Ins . . . Vegetable Displays . . . and special type refrigerators to fit all needs. Every one a super value. Write for details.

TYLER FIXTURE CORP., Dept. E, Niles, Mich.
New York Office: 681 W. 26th St.
Boston Office: 683 Beacon St.
Chicago Office: 1863 W. Ogden Ave.

REACH-IN BOXES - 40% greater capacity.

TYLER WELDED STEEL Refrigerators

SPECIAL OFFER \$18.50

SERVEL Model J

4 cylinder compressor! New, in original factory crates, ideal replacement unit! Complete with $\frac{1}{2}$ " SAE intake and $\frac{1}{2}$ " discharge valves and flywheel. Bore 1 $\frac{1}{8}$ ", Stroke 1 $\frac{1}{8}$ ".

Price in lots 1 to 5	\$20.50
Price in lots 5 to 10	19.50
Price in lots 10 to 25	18.50

For 1/2 and 3/4 H.P. Commercial Units.
Ideal Replacement Compressor.

NATIONAL ELECTRIC TOOL CO.
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Fan Blades and Blower Wheels

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New Booklet on Methyl Chloride Covers Not Only Refrigerant Technical Data, But Also Takes Up Field Problems

WILMINGTON, Del.—New and revised data on methyl chloride based on recent investigations, plus much practical information about the handling of this refrigerant in the field, is given in a new 9-page spiral-bound booklet issued by the R. & H. Chemicals Department of E. I. du Pont de Nemours & Co.

Copies of the booklet are available to those in the refrigeration professions upon written request to the Chlorine Products Division, R. & H. Chemicals Department of the du Pont company.

New and accurate tables of thermodynamic properties published in the booklet are said to be the only tabulations for methyl chloride sufficiently complete, accurate, and consistent for engineering processes. A new three-color Mollier diagram or chart, published for the first time, is based on these thermodynamic data.

Viscosity values, just redetermined, together with the thermodynamic data, made possible the development of new tables of pressure drops of methyl chloride in pipe lines. Likewise, volume displacements and power requirements have been recalculated.

With the large number of refrigerants now available or in use and the changes in code regulations, it was felt desirable to define accurately the field of application for methyl chloride. The booklet gives information on the main properties of all of the common refrigerants and includes a pressure-temperature chart showing their relationship.

Other sections give detailed information on lubrication factors and problems, moisture and drying agents, and refrigerant transfer and handling.

With the permission of the officials of the R. & H. Chemicals Department of E. I. du Pont de Nemours & Co., AIR CONDITIONING & REFRIGERATION NEWS publishes the following excerpts from the booklet, which are concerned particularly with field problems:

Leak Detection

SOAP WATER METHOD

Leaks of methyl chloride are best detected by placing the unit under refrigerant, air, or nitrogen pressure and applying soap solution to suspected points. During freezing weather glycerine may be used. A leak is shown by the appearance of bubbles. Small units may be immersed in a tank of water.

Difficult leaks may be better located when the unit is under air or nitrogen pressure rather than refrigerant pressure as pressures can be built up to the maximum allowable for the unit and escaping tendencies of air and nitrogen are greater.

Carbon dioxide may also be used in testing for leaks but under no circumstances should oxygen be used. Explosive reactions may take place between oxygen and oil. When testing with air, nitrogen, or carbon dioxide, the machine should not, of course, contain its refrigerant charge. Vapors of methyl chloride as well as liquid refrigerant should be absent if air pressure is to be applied. Gases used for leak testing should be dry.

HALIDE TORCH

Because of the possibility of explosion of higher concentrations of methyl chloride-air mixtures by the open flame, use of the halide torch is not recommended for detecting methyl chloride leaks. While it is true that adequate ventilation of the space being tested should eliminate the possibility of having the minimum explosive mixture of 8.1% by volume methyl chloride in air, nevertheless it is felt that the safest policy is not to use this test method.

A modification of the method that can be used on methyl chloride machines not yet charged with refrigerant, is to introduce a little "Freon-12," which is non-flammable, into the machine and then test with the halide lamp. The pressure can be built up with air, carbon dioxide, or nitrogen after the "Freon-12" has been charged. A few ounces of

"Freon-12" for small machines—more in proportion for larger—will suffice.

OIL SPOTS

Oil spots often enable detection and location of leaks in refrigerating machines as methyl chloride carries more or less oil throughout all parts of the system.

PRESSURE MEASUREMENT

If time allows, leaks may be detected but not located by allowing the unit to stand for at least one-half day under air, nitrogen, or carbon dioxide pressure and noting pressure readings.

If the temperature of the system does not change appreciably, even relatively small leaks may be detected by this method. Pressure readings can be taken while making soap water tests on joints. Similarly, vacuum gauge readings may be observed after a vacuum drying operation.

Lubrication Factors

OIL FOAMING

When crankcase oil is exposed to refrigerant gas under the fluctuating pressures encountered on the low side of a system, there are different amounts of refrigerant dissolved in the oil depending on its temperature and the pressure of the gas above it. As a machine cycles and the low side pressures rise and fall, the refrigerant alternately dissolves in the oil as the pressure is rising and is boiled out of the oil as the pressure drops.

Changes in temperature of the oil, of course, also have an important effect on oil-refrigerant concentrations and this is especially important when a compressor has been idle for some time in a cold location.

Rapid evolution of refrigerant gas from the crankcase oil, resulting when pressure drops quite rapidly, generally causes the oil to foam. Foaming is encountered to a greater or lesser extent with all refrigerants, as none is completely insoluble in oil, but the condition is of course intensified with refrigerants of higher solubility.

As noted above, foaming is beneficial in ensuring adequate lubrication of parts otherwise reached with difficulty but, unless it is properly controlled or eliminated, it may produce one or more of the following undesirable conditions:

1. Slugged oil may produce a compressor knock.

2. Excessive foaming may produce a dry crankcase so that there is insufficient lubrication until the oil is returned after circulation through the system. This, and to a lesser extent the knocking condition, are generally extreme cases that may be encountered in starting up a cold machine.

3. Excessive oil carry-over may produce an oil-logged evaporator in flooded systems because of oil being carried to the evaporator faster than it is removed.

Violent agitation of crankcase oil in splash-lubricated systems contributes to the above factors by its tendency to throw oil where it can be carried along with the suction gas as well as by aiding the solution and dissolution of gas.

The undesirable consequences of oil foaming are avoided by design features which often vary considerably with different manufacturers. Of course, those methods which are designed to narrow oil-refrigerant concentration changes also narrow viscosity changes. Narrowing the range of crankcase pressures by shortening the operating cycles diminishes the amount of concentration change and, therefore, lessens foaming. Concentration change may also be lessened or eliminated by control of crankcase pressure toward constancy.

Also, control to give a gradual rather than sudden decrease of crankcase pressure allows the gas to escape slowly and gives the gas bubbles a chance to break before being drawn into the compression chamber. Some oils, especially those of lower viscosity, have been reported (Concluded on Page 19, Column 1)

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Data on Oil and Dryer Problems

(Concluded from Page 18, Column 4) as not foaming as much as others. Oil level should not be too high in the crankcase.

A very cold machine may have a very dilute oil in the crankcase and the attendant troubles may be encountered at their worst in starting such a machine. Preliminary heating of the crankcase oil may be desirable and some machines have been equipped with built-in electrical heaters for this purpose.

Drawing the suction gas directly into the cylinders from the evaporators, avoiding the crankcase if there is one, eliminates or alleviates concentration changes to a degree depending upon the compressor type and details of the system.

Those types in which the oil reservoir is not subjected to pressure changes have no foaming problem although there may still be excessive oil pumping due to mechanical causes.

A moderately warm oil containing a small amount of dissolved refrigerant is preferable to a cold oil containing a high concentration of refrigerant and, therefore, special provision may be made to keep the oil warm if the usual heating in the cylinders does not suffice. One manufacturer has accomplished this by heat interchanging with the high pressure superheated gas.

RETURN OF OIL FROM HIGH SIDE

Even with slugging and foaming eliminated, high pressure exit gas always carries oil in an atomized or nebulous form. While the most common practice is to allow this oil to circulate through the system a number of traps have been devised, some of them very efficient, to separate the oil particles from the gas, the trapped oil being returned to the oil reservoir by a float-operated valve.

Such oil traps are essential on certain types of refrigeration systems, notably those with flooded evaporators which do not provide sufficiently for oil return. If an oil trap is not used, or if the trap is not 100% efficient, oil particles dissolve in the condensing refrigerant and the resulting solution is fed from the liquid receiver into the evaporator. As no oil separates in methyl chloride liquid receivers, a difficult problem is avoided at this point.

DRY EXPANSION EVAPORATORS

In "dry expansion" systems, evaporation of refrigerant leaves oil particles suspended in and carried

along by the high velocity gas stream through and from the evaporator to the low side of the compressor where the returned oil may add to that in the oil reservoir or may again go through the compressor, providing some lubrication as it goes.

Gas velocities of 1,000 to 2,000 feet per minute are considered ample to keep the evaporator well clear of oil. As a general rule with "dry expansion" evaporators, equivalent to not more than 200 feet of $\frac{1}{2}$ or $\frac{1}{4}$ inch tubing, there need be no oil added to the system above the normal compressor charge.

However, above this, about a pint of oil per 200 feet additional coil may be added to allow for that in circulation. These figures may vary according to gas velocities and amount of oil in suspension so that the allowance may run one quart or more of oil per 100 feet of $\frac{1}{2}$ inch tubing.

FLOODED EVAPORATORS

Return of oil from a flooded evaporator is not as simple as return from a dry expansion evaporator and the treatment of the problem for soluble refrigerants is, of course, generally different from that for the insoluble. As methyl chloride oil solution is carried into a simple flooded evaporator and the refrigerant vaporizes, there is a tendency for the oil to accumulate.

However, just as the oil-refrigerant solution in the crankcase tends to foam as the refrigerant gas is expelled, a somewhat similar condition is encountered in a flooded evaporator. Evaporation of methyl chloride from the bubble films rising from the surface of the evaporator liquid leaves oil-rich films which finally break throwing a blanket of fine oil particles above the surface of the evaporator liquid. The tendency of these particles to settle back into the refrigerant liquid is opposed by the movement of the gas stream toward the suction line. The latter must be designed and placed so that excessive amounts of the oil particles do not drop back and that large slugs of refrigerant liquid are not carried by the suction line so as to cause "frosting back."

A number of designs have been used to allow evaporation of refrigerant from liquid splashed into the entrance to the suction line before it leaves the evaporator chamber. A flooded evaporator like that described above is satisfactory unless oil pumping is excessive or unless there is superheating of the oil-refrigerant solution with the result that oil is carried into the evaporator faster than it is carried out.

Operation is considered normal when the system stabilizes, that is the oil intake and output are equal, at 15 to 20% by weight oil in the evaporator solution. Solutions of this concentration will boil very close to the saturation temperature for pure methyl chloride unless the evaporator design is such that the solution is allowed to superheat above its normal boiling point.

The presence of oil increases superheating tendency. The following figures show the approximate rise in boiling point at atmospheric pressure for various concentrations of oil:

Oil—% by Volume	Boiling Point Rise—°F.
0%	0.0° F.
5%	0.0° F.
10%	0.9° F.
20%	0.9° F.
50%	5.4° F.

In order to provide for unusual conditions occasioned by temporary excessive oil pumping, inefficiency of the oil trap, or superheating of the liquid refrigerant, a supplementary and more positive form of oil return is sometimes desirable. Various wick devices leading from the refrigerant-oil solution to the suction line have been used successfully.

Using Dryers With Various Refrigerants

Activated Alumina, Drierite, Silica Gel, and Calcium Oxide may be used with methyl chloride and methylene chloride. The manufacturer of the "Freons" recommends Activated Alumina, Silica Gel, and Drierite. Temporary use of Calcium Oxide with "Freon-12" has been reported.

The halogenated hydrocarbon refrigerants generally employ a dryer to best advantage in the liquid line where it can remove water before it reaches the "expansion" valve. Pressure drop losses are lower with

a dryer installed in the liquid line and the theoretically better efficiency of vapor line drying is balanced to some extent by the lower fluid velocities in the liquid dryer which promote higher efficiency. In any event, satisfactorily low moisture contents can be obtained by drying the liquid halogenated hydrocarbons.

Sulphur dioxide presents special problems. In the first place, liquid phase drying is inefficient although water can be removed quite well from the vapor by installation of a dryer in the suction line. However, as liquid sulphur dioxide containing water boils, the moisture tends to remain behind as the sulphur dioxide vapors pass off.

Therefore, especially with flooded evaporators, it takes a comparatively long time for the water to leave the evaporator and reach the dryer, and in the meantime, the equipment may have been corroded to an appreciable extent.

Halogenated hydrocarbon refrigerants, having a very low solubility for water, tend to allow early escape of water even from flooded evaporators by the process of two-phase or "steam" distillation as well as by virtue of the known principle that a small amount of a dissolved material of low solubility exerts an abnormally high vapor pressure.

Still another difficulty with sulphur dioxide is that, because of the lack of warning of the presence of moisture by a freeze-up, serious damage may take place before the presence of moisture is suspected. However, temporary installation of a large diameter suction line dryer charged with large particles of drying agent is useful as long as a machine is running, and may well be used for insurance after charging or overhauling a machine. Heating the evaporator after pumping down the low side will help speed the drying if the vacuum pumping on the evaporator is continued so as to draw the water vapor to the dryer.

TECHNIQUE WITH DRYERS

A vapor line dryer of the conventional type should be installed upright with the exhaust end at the bottom to allow for oil drainage. Some designs can be installed horizontally. In the case of a liquid line dryer, the exhaust end should best be uppermost to keep the tube filled with liquid and thus insure maximum contact time.

The quantity of drying agent that should be used is, of course, dependent upon the moisture content of the system and therefore difficult to judge. 0.1 pound of dryer per pound of refrigerant as an average for a service dryer and 0.05 pound of dryer per pound of refrigerant for a precautionary service dryer installed on a supposedly dry system seems reasonable.

Removal of moisture from a very wet system should not be attempted with a dryer. New refrigerant and oil charges are needed, and the system should be dried by a vacuum or flushing treatment before these are added.

The size of drying tube selected for a given job generally should be in accordance with the tube manufacturer's recommendation since this will vary with machine tonnage, refrigerant being treated, size of drying agent particles, and details of design of the drying tube such as filter area and type of filter.

Indicating types of Drierite, Silica Gel, and Activated Alumina have been used to warn of spent drying agent. These are impregnated with cobalt chloride which is pink when moist, blue when dry. As cobalt chloride is water soluble there may be some danger of corrosion and therefore these indicating types are not recommended for refrigerating systems. They are useful in drying air.

Long continued or repeated use of a dryer may be necessary if moisture is introduced by a suction leak or is masked by oil.

When a dryer is installed in the liquid line after refrigeration stops as a result of a freeze-up, the system may be allowed to stand until the ice melts, or gentle heat may be applied to speed the melting. Then if the refrigerant flow is throttled down sufficiently the dryer can remove water efficiently so that there is less chance of repeated freeze-ups before the system is dry.

A system warm throughout speeds the drying by hastening the escape of water from the evaporator and preventing continued freeze-ups. If, however, the dryer itself is too warm it will not remove water effectively.

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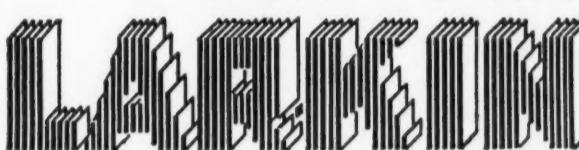
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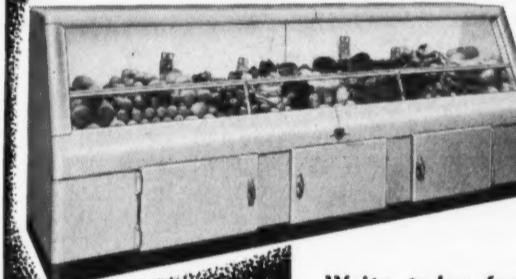
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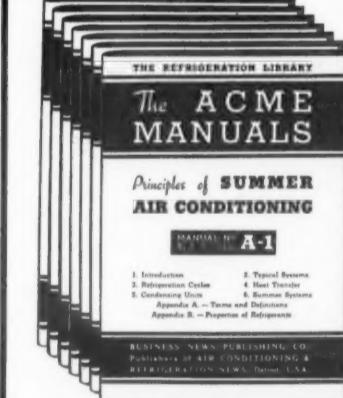
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MANUAL NO. A-4—Equipment development principles. Methods of developing air conditioning equipment with performance charts. Miscellaneous types of refrigeration machines used in air conditioning.

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BUNDY TUBING CO., DETROIT

Milwaukee Dealers Revise Union Pacts; Set \$25 Minimum

(Concluded from Page 1, Column 3) plan providing for the staggering of sales employes so that salesmen may be off every other Saturday evening during the months of July and August, without making any changes in store closing. It was decided that such arrangement should be individually negotiated between the union and these dealers under the existing provision of the old contract, which permits negotiation between union and employer for adjustment of special problems relating to hours and wages.

The union proposed an amendment to Article VII of the present agreement, changing the salary schedule of inside or store salesmen. The present clause on this reads: "Store salesmen shall receive a minimum salary of \$30 per week with quota based on 7 1/2% commission against their salary. All overages above their quota shall be paid twice yearly and figured at 8%."

The union proposed substitution of this provision:

"Store salesmen shall receive a minimum salary of \$35 per week plus a commission of 1% on all sales, plus P.M.'s. The commission and P.M.'s shall be paid no later than the tenth of the following month. There shall be no reduction in present weekly salaries."

Discussion of this proposed change also indicated that its purpose was to correct a limited number of isolated cases, and both the union and the dealers accepted the recommendation that these cases likewise be adjusted under the special clause of the old contract permitting it, thus avoiding the necessity of an actual amendment to the general contract.

Both sides agreed to the proposal of the union to eliminate the classification of the salary schedule set up in the old contract for regular salesmen, that is, salesmen working outside part of the time. This classification started the minimum weekly salary of experienced salesmen at \$20, based on a 49-week quota of \$9,800. With this classification eliminated, the minimum will now be \$25 per week on a 49-week quota of \$12,250.

Both sides agreed to an addition to the old contract reading as follows: "All employees covered by this agreement shall be allowed one hour for lunch or dinner."

Agreement was reached on the union's proposal to include in the agreement a wage schedule for employees in the service departments. While practically all employees in these classifications were now receiving more than the minimums set up, the union wanted the scale and the hours under which they are already working made a part of the contract. This new provision follows:

"The following scale of wages shall apply in the following classifications of work in the service department:

"Shipping clerks and men who work in a supervisory capacity, \$36.00 per week.

"Assistant shipping and receiving clerks, \$30.00 per week.

"Skilled service men and repair men, \$32.16 per week.

"Outside service men, \$32.16 per week. Plus expenses of five (5¢) cents per mile for use of the personal automobile, or in lieu thereof, the employer to furnish the automobile.

"Order filler and warehouse employees, \$30.00 per week.

"Present helper around the store, \$26.50 per week.

"Apprentices shall be negotiated for individually.

"No service employee shall work



Lebor Takes Executive Position With York



JOHN F. LABOR

YORK, Pa.—John F. Lebor, recently with the RKO Corp., has been appointed assistant to the executive vice president of the York Ice Machinery Corp., announces E. A. Kleinschmidt, executive vice president.

Mr. Lebor was graduated from the University of Oregon in 1928 with honors, and obtained his master's degree from Harvard university in 1930. In 1930 he entered the training course of the Equitable Trust Co. of New York and the same year became security analyst in the firm of Scudder, Stevens & Clark.

In 1933 he joined the Radio-Keith-Orpheum Corp. where he served as funded debt administrator and handled miscellaneous corporate and financial assignments until his present appointment.

more than eight (8) hours consecutively per day nor more than forty-eight (48) hours per week. Said hours shall be worked within six (6) days. One (1) hour shall be allowed for lunch for sales and service employees after not more than four (4) consecutive hours of work.

"All time worked in excess of eight (8) hours per day or forty-eight (48) hours per week shall be paid for at the rate of time and one half, except Sunday and holidays, which shall be paid for at the rate of double time. Sales employees shall be paid at the rate of double time for all Sunday work."

Business Manager Herman Burbach announced at the meeting that it is the intention of his union to strictly enforce all provisions of the existing contract after July 1. He declared that there had been some violations, particularly of the evening closing provisions, and that these were causing considerable trouble. "It is our intention," he said, "to go into court if necessary, beginning July 1, to enforce any provisions of the existing contract which are being violated."

Milton Peters, business manager of the Servicemen's Union, who sat in at the conference, also stated that his union would join the other in a policy of strict enforcement against violators beginning July 1.

Universal Cooler Will Move To Ohio City

(Concluded from Page 1, Column 3) system and filters to remove the dust. These air conditioning functions, so essential to silk manufacturing, will also prove useful in the quality control of Universal Cooler refrigeration machine manufacturing.

The new plant is located at the junction of the New York Central, Erie, Pennsylvania, and Chesapeake & Ohio railroads, and is on main truck routes.

Canadian operations of the Universal Cooler Corp. will remain unchanged.

30% of Sales In \$200 Price Class, Roycraft Says

MINNEAPOLIS—Approximately 30% of Philco refrigerator units moved here during the first five months of 1940 listed in the \$200 and over price class, it is reported by The Roycraft Co., Philco distributor.

Lyle Sees Good Years Immediately Ahead

(Concluded from Page 1, Column 2) custom to heat some homes to various degrees of comfort," he said. "In this country, we have heated to comfort a greater percentage of our homes than any other.

"But air conditioning is improving the heating conditions by controlling the humidity as well as the temperature. Our refrigeration is contributing not only to the preparation and preservation of foods and other necessities of life, but along with air conditioning, is improving the manufacturing processes of many products making them cheaper so that more people may enjoy their benefits."

Commenting on the war situation, Mr. Lyle pointed out that a year, or probably two or three, would be required before Germany could consolidate victory and attack America, and said he could see "no reason for our having any hysteria over the present situation."

"But America should arm herself while there is time to do it," he contended. "It is to be hoped that the industry of the country can be organized without the usual red-tape and politics that is nearly always prevalent in cases of this kind. This arming project is going to put practically every able-bodied citizen to work who desires to work.

"I can honestly say to you that the future looks to me to be brighter for this corporation than at any time since 1931."

Dealership is the only exclusive electrical appliance store on Main St. and John C. Kleih Co.

'Freon' At the N. Y. Fair



Lois January, stage star, holds cage housing canary used in refrigerant demonstration.

Utah Power Salesmen Form Dealership

(Concluded from Page 1, Column 3) carrying both major and small appliances and continuing the merchandising of all lines formerly handled by the power company before it went out of the merchandising field. A line of domestic stokers also has been added.

Dealership is the only exclusive electrical appliance store on Main St. and John C. Kleih Co.

Dubuque Salesmen To Get Cash Prizes

(Concluded from Page 1, Column 5) unit his company sells, and the power company adds the additional \$1.50 per unit. This amount is budgeted for campaign expenses, with 25% going into the salesmen's cash prize fund and the remainder being used for advertising and sales promotion.

Weekly 7:30 a.m. breakfast meetings are scheduled throughout the campaign, with speakers to include S. E. Sorenson, General Electric Co., Minneapolis; Ralph Winegartner, Frigidaire sales promotion manager, Chicago; and B. J. Kerper, sales manager of Midwest-Timmerman.

At these weekly breakfasts, prizes will be awarded to salesmen on the basis of results obtained during the preceding seven days. Thirty prizes are to be awarded each week, ranging from 25 cents to \$5. A sales "punchboard" has been devised, with salesmen qualifying for one punch with every sale closed.

Cooperating distributors include Crescent Electric Supply Co., Westinghouse Electric Supply Co., Home Supply Co., Seig Co., J. F. Stampfer Co., Kelvinator Corp., and Midwest-Timmerman.

Dealers participating in the drive are Appel-Higley Electric Co., Interstate Power Co., Montgomery-Ward Co., Renier's, Sears-Roebuck, Even Radio & Appliance Co., Home Supply Co., Midwest Henker Co., Radio Shop, Roehl-Phillips Co., Stampfer's, and John C. Kleih Co.

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